Epidemics in Colonial Guatemala

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Active Measures in the War Against Epidemics in Colonial Guatemala, 1519-1821

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Eighteenth-century print of Yzabal Lake (Golfo Dulce), *largest lake in Guatemala, twenty miles southwest of the Bay of Amatique. During colonial times, it carried considerable trade between the highlands and the sea.*

Active Measures in the War Against Epidemics in Colonial Guatemala, 1519–1821

"It happened that during the twenty-fifth year the plague began, oh, my sons! First they became ill of a cough, they suffered from nosebleeds and illness of the bladder. It was truly terrible, the number of dead there were in that period. . . . Little by little heavy shadows and black night enveloped our fathers and grandfathers and us also, oh, my sons! . . .

Great was the stench of the dead. After our fathers and grandfathers succumbed, half of the people fled to the fields. The dogs and the vultures devoured the bodies. The mortality was terrible. Your grandfathers died, and with them died the son of the king and his brothers and kinsmen. So it was that we became orphans, oh, my sons! So we became when we were young. All of us were thus. We were born to die!"

Annals of the Cakchiquels[1]

The Indian narrative above dramatically describes the great measles epidemic of 1519–1521, the first to strike Central America after the arrival of the Europeans. Thereafter, during the three hundred years of colonial rule, the specter of disease was seldom absent.

In recent years there have been many works on medicine in colonial Guatemala. What differentiates this collection of Indian and Spanish documents is that it is neither a broad history of the colonial era nor is it restricted to a single ethnic group or organization. Instead, it confronts a basic question: What could be done when an epidemic struck?

Impact of the Epidemics

Based on tax and census records, modern researchers estimate a decline in the indigenous population of at least 90% in the first 160 years of European conquest. Colonial mismanagement, drought, famine, flood, earthquakes, and even locusts ravaged the peoples of colonial Guatemala, but the epidemic—*peste*—was the most obvious and chief cause of devastation.[2]

by Lawrence H. Feldman

Documents suggest the presence of malaria in the sixteenth and seventeenth centuries—far earlier than generally claimed for the appearance of that disease. Lowland populations were particularly susceptible. Their villages suffered the relentless onslaught of endemic diseases that caused chronic illnesses or disabilities, gradually whittling away the population. Towns in the province of Escuintla, for example, were said to be "well populated" with Indians blinded by disease. Census documents for Tacuilula, an Escuintla town that vanished at the end of the eighteenth century, repeatedly referred to Indians excused from taxes because of leprosy and syphilis.[3]

The four horsemen of the apocalypse in Guatemala were smallpox (*viruelas*), typhus (*tabardillos*), measles (*sarampión*), and influenza (*epizootia*). Between 1519 and 1821, there were at least twenty epidemics of smallpox, eighteen of typhus, nine of measles, and four of influenza. These epidemics are documented in Table 1.

Colonial diseases cannot always be authoritatively identified, however, and at least twenty-two other outbreaks were documented but not specifically identified (Table 2). The difficulty was frequently semantic. Modern investigators, for example, associate certain symptoms with influenza (*epizootia*) and mumps (*paperas*), yet those terms do not always appear in the Spanish documents. Also, the Spanish used *viruelas* to describe several kinds of eruptive fevers until the eighteenth century; and as late as 1768, doctors used the same treatment for measles as smallpox.[4]

Indian languages are frequently more precise. In the Nahua language, commonly used in southern Guatemala, *hueyzahuatl* ("great leprosy") was used for smallpox, and *zahuatl tepiton* ("small leprosy") for measles. The standard dictionary of sixteenth-century Nahua used *teococoliztli* ("divine epidemic") for leprosy. In Central Mexican Nahua, from the earliest days, smallpox had its own word, *totomonaliztli*.[5]

Colonial Government and Boundaries

The conqueror of Guatemala, Pedro de Alvarado, established the first colonial capital at Santiago de los Caballeros in 1524; three years later, the capital was moved to Almolonga (on the site of Ciudad Vieja). After Alvarado's death, the seat of government was relocated to Antigua. At that time, "the Kingdom of Guatemala" constituted a large portion of Central America, including the current Mexican state of Chiapas and the Republics of Guatemala, El Salvador, Costa Rica, Honduras, and Nicaragua.

Alvarado held the title Captain General, and after his death the title fell to the President of the Royal Court (Audiencia). This individual (also called Regent) served as both chief executive officer and head of the military forces. After the Audiencia, the next level of administration was composed of the provincial governors: alcalde

GUATEMALA IN 1800
NOT UNDER SPANISH ADMINISTRATION
Lago San Andres
PETEN
PETEN
Gulf of Honduras
Comitan
Santa Ana
Huista
San Mateo
Santa Eulalia
Jacaltenango
Soloma
San Antonio
Concepcion
Petatan
CHIAPAS
TOTONICAPAN
Ixcoy
Chajul
VERAPAZ
Coban
Polochic
Golfo
Lago de Yzabal
Omoa
Todos Santos
San Martin
San Juan Atitan
San Sebastian
Huehuetenango
Totonicapan
Olintepeque
QUETZALTENANGO
Solola
CHIMALTENANGO
(New)
Guatemala City
Lago de Atitlan
San Antonio Aguacalientes
Antigua
SUCHITEPEQUEZ
Ciudad Vieja
AMATITANES
Amatitlan
CHIQUIMULA
Esquipulas
Jumaytepeque
Lago de Guija
Escuintla
Tacuilula
ESCUINTLA
Guazacapan
Pacific
Ocean
Sonsonate
San Salvador

"Battle of Guatemala between the Spaniards and Tlaxaltecas, against the Cakchiquels," from Lienzo de Tlaxcala

mayors, corregidors, and intendents. In the various towns, city councils exercised jurisdiction.[6]

Parallel to those offices was the hierarchy of the Roman Catholic church, headed by an archbishop in the capital and bishops in Honduras, Nicaragua, and Chiapas. At the local level was the parish priest. Both clerical and military authorities reported regularly to the Council of the Indies in Madrid. Their actions were crucial when action was necessary to curb an epidemic. Yet none had medical training.

Medical Practice in the Colony

When Pedro de Alvarado began his conquest of Guatemala, he brought along cavalry, infantry, guns, and crossbows, but there was not a single doctor in the entire expedition. The great conqueror walked with a limp because of self-administered treatment following a leg wound.[7] For

Table 1
Measles, Smallpox, and Typhus in Colonial Guatemala

DATE	LOCATION	SOURCE
Measles		
1519-21	Chimaltenango	Recinos & Goetz; Fuentes y Guzmán, I, 338; MacLeod, p. 98; Hopkins
1532-34	Central America	MacLeod, p. 98
1560	Solola	Recinos & Goetz; Orellana
1614	Central America	AGI Guat 121
1727-28	Chimaltenango, Antigua	AGCA A3.16-2817-408; Pardo
1746	Chiquimula—4 towns	AGI Guat 371; AGCA A.1751-4595-f.146
1747	Chiquimula	AGI Guat 370
1748	Chiquimula Amatitanes	AGI Guat 371
1768-69	Totonicapan—3 towns	AGI Guat 409
1769	Antigua, Amatitanes	AGCA A1.1807-11801; Wortman, p. 181
1773-74	Quetzaltenango	AGI Guat 409, 558, 661
1805	Guatemala City	AGI Guat 717
	Totonicapan	
Smallpox		
1534	Central America	Asturias, p. 87
1563-65	Antigua, Solola	AGI Guat 9; Recinos & Goetz
1576-77	Central America	AGI Guat 156, 10; Recinos & Goetz
1588	Solola	Recinos & Goetz
1600	Totonicapan, Verapaz	AGCA A3.16-40493-2801
1614	Central America	AGI Guat 121
1660	Antigua	Molina
1694	Totonicapan, Antigua	AGCA A1.4.7-30980-4026
1707-08	Antigua, Cor. Valle	AGCA A1.1787-11781
1723-25	Antigua	Pardo, pp. 123, 127
1733	Antigua, Totonicapan	AGCA A3.2819-40916
1752	Antigua	Pardo, p. 168
1761	Antigua	AGCA A1.1799-11798; AGCA A1.2379-1803
1780	Antigua, Quetzaltenango	AGI Guat 423,392, 574
	Amatitanes	AGCA A1.47-31005-4026
	Chiapas	AGI Estado 37-55
	Totonicapan,	*Gazeta Guatemala* 6
	Quetzaltenango?	AGCA A3.16-2819-40918

DATE	LOCATION	SOURCE
Smallpox		
1781	Escuintla—2+ towns?	AGCA A1.31-3408-169; AGI Guat 410 1781-82
	Central America	AGI Guat 451
1782	Totonicapan—3 towns?	AGI Guat 411
	Chiquimula—2 towns	AGCA A3.16-1615-26545; AGCA A3.16-0950-1772
1794-95	Totonicapan, Chiapas, Quetzaltenango	AGI Guat 478, 452, 648, 917
1800	Escuintla	AGI Guat 612
1801	Escuintla—2 towns	AGI Guat 620; AGCA A1.16-4896-245
1802	Guatemala City, Totonicapan, Peten	AGI Guat 490, 452
1815-16	Escuintla	AGCA A3.16-252-5748
1816-17	Chimaltenango	AGI Guat 416
1817	Chiquimula—2 towns	AGCA A3.16-5139-252; AGCA A3.16-5215-254
Typhus		
1570	Verapaz	AGI Guat 9
1614	Central America	AGI Guat 121
1631-32	Central America?	Ximenez, II, 207; Asturias
1666	Antigua, Totonicapan	AGCA A1.1-50569-5911
1741	Antigua	Pardo
1746	Cor. Valle	AGCA A.1-1794-11788: 138-141
1749	Antigua	Pardo
1772	Escuintla	Gavarrete, p. 282
1773-74	Guatemala City	Martinez Durán, p. 265
	Chimaltenango	AGI Guat 410, 411
	Totonicapan	AGI Guat 409, 558, 661
1785	Totonicapan	AGI Guat 451
	Quetzaltenango	
1788	Quetzaltenango	AGI Guat 476
	Verapaz	
	Suchitepequez, Solola	
1797	Escuintla—3 towns	AGCA A1.49-3416-169; AGCA A1.49-7782-377; AGCA A1.19-7266-350
1797	Totonicapan—8 towns	AGI Guat 832, 694, 705, 832
1803	Chiquimula—3 towns	AGI Guat 453, 712
1804	Totonicapan	AGI Guat 622

DATE	LOCATION	SOURCE
Typhus		
1807	Chiquimula	AGCA A1.19-8823-421
1811-13	Totonicapan	AGI Guat 848
1814	Amatitlan	AGCA A1.21-11903-1809
1817	Chiquimula—2 towns	AGCA A3.16-5139-252; AGCA A3.16-5215-254
1818-19	Totonicapan	AGCA A1.4-388-8099; AGCA A1.4-6118-56743

Table 2
Other Epidemic Diseases in Colonial Guatemala[1]

DATE	DISEASE	LOCATION	SOURCE
1536	Epidemic	Guatemalan Highlands	Fuentes y Guzmán, II, 371
1545-48	Influenza Cucumatz	Central America	[Anon.] "Isogoge Histórica," p. 290; Figueroa
1558	Influenza	Antigua	Figueroa
1560-61	Epidemic	Central America	AGI Guat 9
1571	Epidemic Plague	Verapaz Totonicapan	Viana et al. p. 150; AGCA A1.5942-51995
1585	Epidemic	Quetzaltenango	AGI Contaduria 968
1590	Influenza	Solola	Recinos & Goetz; Figueroa
1598	Epidemic Plague	Verapaz	AGI Guat 11
1601	Mumps?	Solola, Coban	Recinos & Goetz; Orellana
1623	Epidemic	Antigua	Lutz, p. 745
1647	Influenza	Antigua	Molina; Ximenez, II, p. 254; Figueroa
1650	Cucumatz	Antigua	Fuentes y Guzmán, III, 401-2
1654	Epidemic Plague	Amatitanes	AGI Guat 72
1676	Epidemic Plague	Central America	Molina
1682-89	Malaria?	Amatitlan	Orellana, p. 155
1710-11	Epidemic Plague	Antigua?	[Anon.] "Isogoge Histórica," p. 291
1713-16	Epidemics	Tacuilula Guazacapan	AGCA A3.16-31537-2074 AGCA A13.16-36541-2502

DATE	DISEASE	LOCATION	SOURCE
1749	Epidemic	Chiquimula parish	AGI Guat 371; AGCA A-1751-4595-f. 146
1759	Malaria[2]	Chiquimula	AGI Guat 239
1765	Epidemic[3] Plague	Chiquimula	AGI Guat 543
1768-70	Epidemic Plague	Chiquimula—12 towns	AGI Guat 410
1786-87	*La Bola*[4]	Central America?	AGI Guat 451, 475, 654
1802	Epidemic	Escuintla	AGCA A1.19-7266-350
1803	Epidemic Plague	Chiquimula—3 towns	AGI Guat 453, 712
1811	*Mal de Amarillo* (Yellow Fever?)	Escuintla	AGCA A1.19-7266-350
1817	Epidemic Plague	Escuintla Chiquimula Totonicapan	AGCA A3.16-5148-252 AGCA A1.73-15401-2152

1. In this table, the Spanish terms *peste* and *cocolistli* are treated as "epidemic"; no further identification of a specific illness is attempted. Identification of influenza comes from Horacio Figueroa Marroquin, *Enfermedades de los Conquistadores* (Guatemala: Universidad de San Carlos de Guatemala, 1983), p. 28.

2. This epidemic with intermittent fevers was found at Omoa and in the Atlantic lowlands of the province of Chiquimula. Among the victims were the Captain General and his family, who were in transit to Guatemala City. The epidemic was said to have existed in the coastal zones since 1756. See Bachiller Francisco Azeituno, "Testimonio de la Certificación del Médico . . . [de] Alonso de Arco y Moreno Presidente . . . y Capitan General de este Reyno en razon de las enfermedades que he padecido . . . ," Oct. 23, 1759, Archivo General de Indias, Guatemala 239, Seville.

3. This epidemic, associated with the rotting corpses of people and animals, appeared after the earthquake that leveled Chiquimula; it may have been typhus.

4. *La Bola* was confused with typhus in the source cited by W. George Lovell, *Conquest and Survival in Colonial Guatemala: A Historical Geography of the Cuchumatán Highlands, 1500-1821* (Kingston and Montreal: McGill-Queen's University Press, 1985), p. 151.

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medical assistance, the early Spaniards had only the infamous and unschooled "Doctor N.," who in the words of an old chronicler, "killed more people than he cured."[8]

All five hospitals in Guatemala were located in Antigua, which served as the capital from 1541 to 1773. The first, founded in 1527, eventually became San Alejo, the hospital for Indians. San Alejo had a total of only twelve beds by 1650. Other Antigua hospitals were San Juan de Dios for the Spaniards, Hospital San Pedro for the clergy (joined to San Juan in 1795), and Bethlem for the handicapped. Two other institutions, San Lazaro (1640) and San Jose (1780), treated victims of leprosy and smallpox respectively.[9]

Aside from temporary shelters for the ill, there were no hospitals in the seventy-two Indian towns outside Antigua. Those populations relied on native healers and the kindliness of Spanish friars.[10]

Things were little better by the end of the colonial period. Practitioners with a claim to university training were few and far between, while so-called "destroyers of humanity" endangered lives. An 1804 statement described a birthing attendant who "instead of delivering the baby, delivered the mother's intestines." During another birth, as the baby emerged arm first, the practitioner grabbed the arm and pulled, "but seeing that his efforts were in vain, he cut it off."[11]

Medical Education and Administration

Medical professionals in colonial Guatemala were scarce. Between 1700 and 1821, the University of San Carlos granted only thirty bachelor's degrees in medicine—or about one every four years for a kingdom of approximately one million people. A bachelor's degree could be earned after eight years of study (four in the arts and four in medicine) and two years of internship with an established physician, followed by an examination.[12]

Two advanced degrees—the licentiate and the doctorate—were also available from the University of San Carlos. Of those, according to historian John Tate Lanning, "only the licentiate involved the additional work that might indicate greater learning, but even this degree did not involve any more classes or laboratory work—only the reading and the memory required to perform the 'acts' and stand the examinations."[13]

Surgeons came in two forms. Most common were the "romance" variety, who spent four years apprenticed in a hospital or under an approved surgeon, followed by examination. "Latin" surgeons had courses in a school of surgery.[14]

The Royal Protomedicato, a board of licensed medical examiners, existed elsewhere in the New World since the sixteenth century but was not established in Guatemala until 1793. Its jurisdiction covered the entire field of medicine—algebra (bonesetting), midwifery, phlebotomy

(bloodletting), surgery, and pharmacy. In practice, however, its interest rarely extended beyond the examination and licensing of new doctors and the prosecution of malpractice claims. Fees or fines for those services, as well as modest salaries, comprised the protomedicos' income. The board served primarily as a court for European or Creole practitioners.[15]

All medical professionals were for the white population. Indians relied on their own curers. Activities of village healers or Indian experts were not the concern of the protomedicato, although such practitioners did occasionally undergo scrutiny by clerical authorities, as shown in the first of the colonial documents printed here.

Images of the smallpox epidemic of 1520 from the Florentine Codex

[The following original documents, translated by Dr. Feldman, are printed in roman. His introductions and conclusions are printed in italics.]

Saints and Devils

The line between a saint and a devil has long been a problem in Guatemala. A seventeenth-century account of an epidemic, a beatified saint named Pascual Bailón, and an apparition that became known as El Rey San Pascual shows the interaction between Indian beliefs and religious and civil authorities in colonial Guatemala.

In 1650, a prominent Indian lay seriously ill from the painful fevers of cumatz, *an incurable disease. A vision of a tall, fleshless figure clothed in glowing robes appeared to him and commanded worship. Identifying himself as San Pascual Bailón, the figure predicted the time of the man's death and offered to remove the scourge of* cumatz *in exchange for devotion. When the epidemic did indeed cease, word of the miraculous vision spread. The Indians identified the apparition as both a new saint—El Rey San Pascual—and the angel of death. Images of him began to appear in family shrines and even in some traditional celebrations. As worship of the idol increased, local priests turned to the Inquisition. All images of El Rey San Pascual were ordered to be destroyed in public bonfires. How a saint became part of the Indian arsenal of weapons against epidemics in the late 1600s was recounted in this report by Captain Antonio des Fuentes y Guzmán, a descendant of the Hispanic conquerors and a native of Guatemala.*[16]

Guzmán also offered details about Indian health. Cumatz *was limited to the native population, and the only apparent treatment was heat—at the hearth of sulphurous baths. It is clear from the narrative that no other treatments were offered to the ailing population.*

L.H.F.

Over the years, changes have occurred in the portrayal of El Rey San Pascual. The figure now wears a crown instead of the simple garb of a Spanish friar.

(Courtesy of Italo Morales)

The Epidemic Called Cocoliztli and the Image of Death Called San Pascual

The natural inclination of this generation of Indians toward superstition and idolatry extends even to inventing, as so corrupting just cause, chimeras that they abuse to satisfy their needs. This had not happened for many years when in 1650 the worship of a fleshless figure of death, among the Indians of the valley of Guatemala, had its origin in their continuing ignorance. On the occasion that we refer to there raged an affliction among the Indians of the valley of Guatemala, which is an epidemic of natural origin, that the Pipil Indians call *Cocoliztli* and the Cakchiquels call *Cumatz.*[17] It caused a continuing and prickling pain in the stomach with strong twists that came in spasms with a numbness of the muscles, nerves, and joints that worked only with agonizing pain and whose undulating movements resulted in the name of *cumatz,* which means snake. This affliction continued in the stomach, spreading repeatedly to other parts of the body, the pain being always accompanied in the miserable patient by the indescribable torment and anguish of an active and malicious fever and implacable thirst. It is an illness inborn in the Indians, incurable because all who catch it are quickly unable to do anything. These miserables are without any possibility and means to repair their sorrows. They have no means of escaping. I have noted when young that the only medicine and remedy they have is a mat placed on the hard ground near the hearth and to wait for Providence to decide if they live or die. Many enemy authors search maliciously for other reasons why so many towns have been extinguished.

This epidemic had fed on the entire district and its extension of the valley of Guatemala. Many of the most excellent and numerous settlements were empty like deserts, one of these being San Antonio Aguacaliente, which is one of those adjacent to the parish capital of Almolonga. For up to a year its inhabitants had suffered the dreadful carnage and desolation caused by this deadly illness that infected these miserable Indians with pain. Desiring a remedy, they went to some sulfurous and very hot fountains that they had in this town. They bathed here a long time, leaving well aware that they would soon die. Among those sick was one of the leading citizens of this place. Believing that he could die any moment, he requested and received the sacraments, and now at the end of his life he received a vision in which appeared a beautiful person, gleaming in a glowing light. More than that he could not discern because he was dressed in full-length clothing like the habit of my patron San Francisco. But he didn't believe it was a friar who was so dressed and adorned with glowing fabric of some unimaginable material. Inspired with confidence by this vision, bravely from his seat on his bed of rushes although his tongue was numb with weakness and thirst, he asked, "Who are you, what great Lord?" This very lofty and serious individual in a graceful and calm manner asked the sick Indian his own question, inquiring: "*Why don't the Indians celebrate and make a festival, like for the other saints, for San Pascual Bailón?*" But the poor Indian responded that he never heard nor knew until now the name of the said saint and that he believed that the other Indians also had no knowledge of him. And who was the great Lord who wanted to know this? And the personage said that he was San Pascual Bailón and that he should understand, in order to inform the other Indians, that it would be very pleasing to him and save them from their illnesses if with faith and a clean heart they were to call on him by celebrating with images and pictures made of him. God wants him to be their patron in order that by his intercession they would be free of the contagion that afflict them and so free them from death.

The humble Indian remained very astonished when consoled by the words of the saint. But pleased and respectful, he said that he then promised his devotion but that others of his nation would be incredulous and call him crazy and not give credit to his words.

Strengthened by his new and welcome patron, he asked what he should say to the Indians. *What proof would San Pascual Bailón offer of being his patron and advocate, and that if they possess and invoke his picture will they be freed of death?* "As a sign that you are my messenger (said the Saint), you will die within nine days, and from this day the pestilence will cease and no other Indian will die." And blessing him the saint disappeared from the view of the sick one. He then called the pious volunteers who assisted the sick and asked them to call the parish priest. When he arrived, in the presence of these pious volunteers and other Indians who came with the vicar, [the sick man] told what had passed with San Pascual Bailón.

Having been examined very carefully by the priest and not disbelieving what the saints can do with God, on the following day he sang a mass, preaching after it and urging the people to show devotion to San Pascual. From this day, thanks to the mercy of God, the illness ceased. The truth of what he preached, that the vision was not a dream nor delirium, was certified by the death of the Indian messenger after nine days.

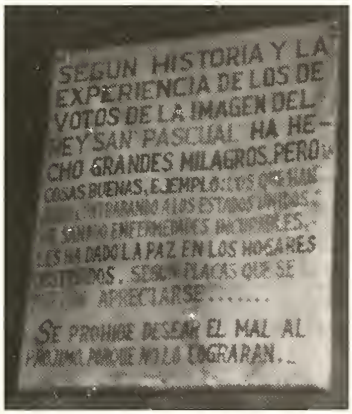
From here the story of the event diffused to all the towns of the district. Because of the evident mercy and protection or because the Indians like to try novelties, all those of the valley of Guatemala took pains to show their devotion to their holy patron. When they placed themselves under his protection they obtained from his intercession and pleas great mercy and marvels. But their ignorance was such that they received the news corrupted—confusing the saint with the figure of death, or thinking that the image of death was a representation of San Pascual Bailón that would save them. For the ill persons who wanted it, they fabricated statues of death with the title of San Pascual. There is not an Indian house where one didn't find two or three large and small ones placed on their altars with elegant flowers and perfume. In this way, confusing the cause with the effect, they showed that they were grateful for they were very sure that San Pascual was, in their opinion, death. This error was so general and so public was the disorder of their ignorance, that it came to the notice of the holy office of the faith [i.e., the Inquisition], which ordered the parish priests and vicars of the Indians to do all in their power to remove the effigies and burn them in a bonfire in the public plazas in view of the people, as was done and executed with promptness. Despite this activity the memory survived, and wherever they see a similar picture they make reverence and bend their knees. The procession of our *Santo Entierro de Cristo Señor* leaves from the church of Santo Domingo on Holy Friday and in front of it used to be, carried on a cart, the skeleton of death [in the Spanish, literally the "Holy Burial of Lord Christ"]. On it many Indians deposited robes, wreaths of flowers, and many branches to adorn it. Because of this and in order to remove it from view, it was determined by the city council, justices, and government of Guatemala who are responsible for it, that the town crier would proclaim that they intend to eliminate the cart. And it now has been fourteen years since it left on this day.

Effigies of the skeletal El Rey San Pascual continue to be displayed in homes throughout rural Guatemala and at a chapel in the town of Olintepeque (formerly in the colonial province of Quetzaltenango). The shrine, built as recently as 1970, draws many pilgrims, especially during an annual celebration. According to a 1989 description by Italo Morales, Ph.D.:

The date of the celebration . . . is May 17, when people from all over the country, as well as Tapachula, Mexico, and El Salvador come to visit him. There is no mass celebrated in his honor since he is anathema to the Catholic church, except that *chimanes* [i.e., Indian curers] come to perform rites.

The chapel, which . . . is very small . . . was built with alms from the devotees; its maintenance is also paid with the same alms. . . . The altar is filled with flowers brought every Sunday and the *"camarin"* (where he is enclosed or kept) is made of glass with metal bars and is well locked for protection against vandals. . . .

His devotees either leave thank you notes on the wall . . . or bring him capes. According to an informant he must have at least a hundred capes, of which he wears three or four at a time.[18]


SEGUN HISTORIA Y LA
EXPERIENCIA DE LOS DE
VOTOS DE LA IMAGEN DEL
REY SAN PASCUAL HA HE-
CHO GRANDES MILAGROS, PERO
SE PROHIBE DESEAR EL MAL AL

Above, the camarin at the chapel at Olintepeque. The sign at left reads: "According to the history and experience of those devoted to the image of King Saint Pascual he has made great miracles, but good things, for example: [helping] those who go illegally to the United States, healing incurable illnesses, [and] giving peace in destroyed homes. . . . It is prohibited to desire evil near him, because it will not be granted."

(Courtesy of Italo Morales)

Native Drugs for the Healing of Measles and Smallpox

Herbs and drugs were the most common means of treating the sick. In the 1769 document printed below, Doctors Manuel Avalos y Porras and Francisco Desplanques named twenty-three substances to be used as drugs or health aids.[19] *Excluding burnt deer horn, ground mother of pearl shell, ground eggshell, mercury, and soil from pilgrimage sites, all were derived from plants.*

Colonial practitioners with access to the pharmacies of the capital could choose from well-stocked shelves of "lizard excrement, spider webs, peacock and gander dung, urine of the cow, and afterbirth of a woman," to name a few. Friar Aguilar's garden of "medicinal herbs" in Verapaz included rue, rose, centaury, common camomile, nettle, coffee, borage, and mint.[20]

Desplangues and Porras described the treatments offered to both Spaniards and Indians. They observed that the rich—"who have help, comfort, and all the care that they need"—usually fared better.

L.H.F.

Majolica pottery, green on yellow, from the Museo de la Farmacia de Guatemala, Guatemala City. The jar and bowl are typical of pieces made at Antiqua during the colonial era.

(Courtesy of the author)

Description of the Procedure Used in the Curing of Measles and Smallpox, Prepared at the Request of the Government as per the Order of the Fiscal of His Majesty (1769)

Description

The reigning epidemic is measles; it is an exacerbated fever with eruption of red spots on white, similar to the bites of fleas, raised little more than the surface of the skin, and joined together to make larger spots, which sometimes cover without interruption very large areas, particularly on the face. In the Indians, mulattos, and blacks the eruption is of the shape and size of heads of pins, of the same color as the skin, and in all one describes it best by saying: a little dust similar to tiny sawdust.

Differences

Besides measles, which is the illness most common, one also finds occasionally smallpox and sometimes *morbillosas* fevers or *sarampionosa,* which one observes in those who previously had measles.

Diagnosis, or the method of recognizing and distinguishing the illness

In practice it is useful to distinguish measles only two times; the first is before the rash, and the second after the rash appears. Before the rash appears, one recognizes it by an exaggerated cold; there is pain in the head and the tongue, the eyes tear and are red, and one can't stand the light; the nose drips, there is much coughing; sounds sometimes hurt one; and one of the most certain signs is that the tongue, which is more or less white, has near the tip some bumps like pinheads, which are very red. Together with all this, one is irregular or with a small fever, which one recognizes by a more frequent pulse and extraordinary heat, particularly in the hands. This small fever, like other symptoms, starts in the afternoon and is stronger in the night than in the day. All these signs, or even most of them, one finds together. One can sometimes add vomiting and diarrhea, with expulsion of worms. Neither is it rare that the ill bleed from their noses or cough up bloody phlegm. And that in women they advance their periods—at first for only a few hours, and afterwards for two, three, or even eight days or more.

In the second time (after the rash appears), the symptoms of the first greatly increase, particularly the fever in the night. In whites, one finds the eruption of superficial red spots of two to four millimeters in diameter; and in the Indians, mulattos, and blacks the eruption of little grains like heads of pins, of the same color as the skin. This eruption begins on the face, and afterwards follows the chest to the arms and other parts of the body. The fever, the condition of the face, and the elevation of the spots or grains lessens after three or four days of measles. Two days afterwards, the fever entirely ends. Where there were spots or grains of measles is covered with white markings. One can then see that the measles is ended, although the marks sometimes persist two or three weeks afterwards.

One separates smallpox from measles (of the usual type) before the eruption in that the measles-like symptoms are weaker, in lesser number, and that in particular one lacks the sign of the tongue. After the eruption, the body is filled, more or less, with hemispheric semitransparent grains close to 2 mm. in diameter, which burst after two, three, or four days, without complete recovery, and form a scab that comes off, leaving a scar.

The fever of *sarampionosa* begins like measles, has the same symptoms except that of the tongue, and entirely lacks the eruption. It ends in a week.

Prognosis

From our observations, these three illnesses do not have the same danger in the rich—who have help,

comfort, and all the care that they need; if they are fatal and mortal in the Indians and poor, it is for lack of care or food. The duration of the principal illness does not extend beyond a week; but needs a special diet much longer. The symptoms, particularly the diarrhea, continue far longer than the principal illness and sometimes for lack of a proper diet, begins after it. Of the three illnesses that we have discussed in this tract, measles is the most subject to these relapses and requires a special diet longest.

Healing: The Different Remedies for Each Kind of Mishap, Thus One Can Select from What is Closest to the Hand

GENERAL PRECEPTS

As soon as someone is not feeling well, it is necessary to leave the chile, the Chiapa pepper, the suchil [either a fermented beverage or a condiment and anise added to atole], the chocolate, all kinds of alcohol, chicha [a fermented drink, usually of maize], sweet water, and whatever other kind of drink or food that is spicy or naturally hot. Nor should one use the temascal but bathe only with cold water. When the marks of the first stage of measles appear, as defined above, those over twelve to fifteen years are bled from the arm twice. Each time one removes six or eight ounces of blood, as per the constitution of the individual. Those who are fat, who have much pain in the head or in the tongue, who have much coughing, who have much phlegm filling their nose, or those who hurt in the breast have the more need for bleeding than others; and although [the rash of] measles begins to appear, one should not stop the bleeding. If they already have not laid down, as soon as measles begins to appear, the ill should be placed in bed. The bed should be well sheltered, with no ingress of air from the windows or doors, and the patient overdressed with clothes. Beverages should be the usual or hot water or a cooked sprouts of Erythrina [also known as the pito or coralbean tree], or of its leaves or of cooked southern maidenhair fern, barley, borage, and poppy. With all these drinks one can add a little brown sugar in order to alleviate the cough and make the drink more enjoyable. Use whatever drink is easiest to obtain, hottest; and [use it] often, in order to gain quick relief. Those who vomit should take no more than six spoonfuls each time, but repeat it in a short time. When two days have passed without it working and [one has] given two or three enemas, add a little dark soap, brown sugar, and oil or lard or butter (cleaned or cooked). The food should be boiled broth or bread atoles, or rice or toasted rice, or cooked and ground maize, or toasted and then ground tortillas. One can add a little southern maidenhair fern and mint. One ought to feed the patient every four hours, four times a day. Five days after the vanishing of the [marks of] measles, they can put on his clothes and use a little more food. But they should still wait eight days before leaving the house. They should wait fifteen days before going out in the rain, drinking cold water, or walking on the ground with bare feet.

SPECIAL PRECEPTS

Fever ought to diminish from bleedings, abundant drinks, and little food. It ought to vanish only two or three days after the appearance of measles.

Headaches are cured with bleedings; and if it is very strong one bleeds the ankle and smears the face with only tallow or with a mixture of almond oil, or eats it, or mixes it with soap or chicken fat.

Eye pain is removed with a tiny amount of milk, either from a mother or other source, the eyes being covered with a pad soaked in it.

A *sore neck* is cured with bleeding, abundant drinks, mouthwashes of milk or water and milk with cooked mallow, or ointments of the types described under headaches, or by using a poultice of either mallow leaves, or ground Opuntia cactus leaves cooked with milk or water, or cooked mallows, teasel, camomile flowers, or those of elder or parrot herb.

Ear pains are alleviated by filling them with some mother's milk or hot milk or almond oil and then closing them with cotton.

Breast pain is cured with bleedings, with abundant hot drinks, and with the same ointments as noted under headaches.

Stomach pain is cured with the ointments used for headaches or by placing a hot egg omelet on it and an ointment of almond oil or by placing on it linen soaked in cooking oil and sprinkled with *flor de ceniza* [literally, "flower of ashes," perhaps lye].

Abdomen pain is removed with the mentioned ointments used with headaches or by placing pieces of wool soaked in milk or cooked mallows or Opuntia cactus leaves in water, renewing the application with only small amounts in order that it not be counterproductive. The help of cooked mallows or Opuntia cactus leaves, with a little oil and milk, produces a good result.

Vomiting is cured by drinking rarely and a little amount each time, and with the following remedy: one takes the amount of ash one can pick up with one hand, placing it in a glass with some spoonfuls of water and stirring it occasionally for two hours until the ash falls to the bottom and the water is clear; then remove two spoonfuls and add some drops of lemon juice to it until it stops bubbling and give it to the patient to drink. In the shell of a nut, the patient should take burnt deer horn powder or earth from Esquipulas [a pilgrimage center in eastern Guatemala]. One can also apply oil, *flor de ceniza*, or an egg omelet.

Diarrhea is a mishap most difficult to cure and the most rebellious. It comes normally from a lack in the diet, from those who eat too much, who walk on the ground with naked feet, or those who do not take care of themselves in the cold. In order to cure it, it is necessary that they eat very little, that they keep warm and drink all day much milk, mixed with two parts of cooked rose water or some plantain leaves; and that they smear the coccyx with tallow and the stomach with oil mixed with *flor de ceniza*. One can also take the weight of one real [a dime-sized coin] of ground eggshell or of pearly shells. If one has the opportunity to take goat's milk, this is the best remedy.

Constipation is cured by squatting, in order to receive the steam, on a chamber pot filled with hot water and smearing the coccyx with tallow.

Worms are cured by taking some mercury, an amount equal to half a chick pea in size, mixed with a little brown sugar and some drops of water until the mercury is mixed and does not move anymore. Then the patient should take it. Some spoonfuls of oil are also a good remedy. These two remedies should be repeated each day.

In order to alleviate *hysteria*, it is necessary for the patient to put ground rue on the navel and smell feathers, wool, and burnt shoes.

One stops *cough* by drinking much and very hot. If it continues after the ending of the eruption, one drinks milk mixed with two parts of cooked Erythrina leaves. One can sometimes also take the weight of a real of ground eggshell.

Bleeding from the nose or from the chest. If the illness is just starting, one cannot have a better cure than with bleeding and drinking cooked roses or plantains with a little brown sugar.

Smallpox and *sarampionosas* fevers are cured in the same way as measles.

If one follows exactly the method for curing the current illness and its mishaps, with the help of God, one will have no more misfortunes than already experienced up to now.

Reports on a New Disease, 1786–1787

The reports and abstracts printed below were submitted to the Council of the Indies by President José de Estachería between November of 1786 and March of 1787.[21] *They are printed verbatim, with filing notes showing actual date, date of receipt, and date of abstract. Estachería chronicles the epidemic known as* La Bola—*which means, literally, The Ball.* La Bola *claimed few lives in the cities (where Estachería credits bloodletting for recovery), but caused "havoc" in the Indian towns. Estachería makes reference to a "committee of doctors," which apparently was created to oversee the epidemic.*

L.H.F.

November 10, 1786

I wish to give notice that this city and the towns of the provinces suffer from an epidemic called *Bola.* It arrived from New Spain [i.e., present-day Mexico] and appears to be the same that afterward came to Europe, afflicting for three years the inhabitants of Cadiz [an official port of entry for ships from the Americas], where it was called *Pantomina* ["The mimic"].

It has very diverse symptoms. In some it causes an intense pain in the head and some fever. In others it begins with delirium. In still others it starts with a strong fever and pressure on the head, causing pain and acute discomfort in the stomach and breast. Then there are those who develop difficulty in swallowing, coughing, and bloody spittle with a considerable flow from the nostrils. Most only experience chills without major stomach and head pain, some difficulty in breathing, and pain in the bones with a kind of lassitude or slowness in their speech.

This malady progresses very quickly. I have heard of families of 18, 20, and more persons being attacked at the same time in a manner that had been very deadly. It cut most of them down and caused unspeakable dismay because of their inability to perform their public functions and the lack of any assistance to the ill.

Up to now there have been very few deaths in the city; although it seems that in the towns of the Indians it has caused enough havoc since they do not like bleeding and the use of it is strongly recommended, for it stops it. To avoid dehydration and to cause them to sweat, they should drink a brew made from borage, barley, centaury, and other similar plants. These have caused the best results in the said capital, in Ciudad Real [today, San Cristobal Las Casas in Chiapas], and Tuxtla, from where the said epidemic has been introduced into this kingdom. I have received the dispatches from a committee of doctors who informed me quickly and in a clear manner of the curative methods that should be undertaken; and I am enclosing it with this letter. [No enclosure survives.] The time taken to recover from this malady in some has been 4 days, but in many others there has been a relapse. Mostly it has been women and old men who remain ill for a long time. It was understood by the President, and all the individuals of the Secretariat, that those remaining sick, with little or no ability to take care of themselves, are the ones most likely to die. It is for this reason that we provided orders for care of the citizens; and this we should require for the afflicted throughout the kingdom wherever this epidemic exists. Thus we are communicating the

situation that now exists as well as our measures to remedy it.

Letter received on February 28, 1787
Abstract logged in on March 5, 1787

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The President continued to provide news on this illness, saying in letter number 698 of the 15th of December of last year that it had now ceased in the capital without having caused many deaths but that it has begun to spread in other provinces of the kingdom with the same effects as mentioned previously.

Abstract logged in on April 16, 1787

✠ ✠ ✠

Subsequently in a letter of the 15th of January, number 725, he gives an account of this illness, without many details, noting where it spread in the provinces and that its effects were not as benign as experienced in the capital and surrounding district. He attributes this to the climate, as had happened in New Spain, whose circumstances without doubt caused the loss in the small population of the port of Omoa [Honduras]. Here, as soon as the sickness struck, 27 individuals died, all the rest of the inhabitants becoming badly ill.

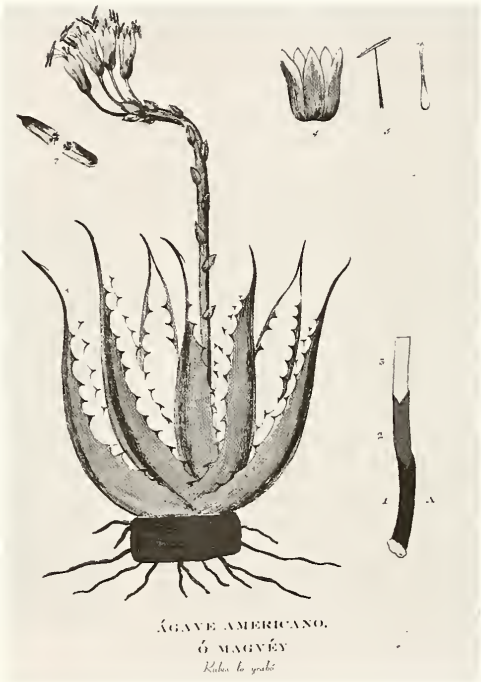
Letter received on the April 23, 1787
Abstract logged in on May 6, 1787

✠ ✠ ✠

In letter number 756 of the 19th of last March the following was received from the President:

According to news received from the governors of the provinces of this jurisdiction relative to the epidemic called *La Bola*, the effects reported previously were very exaggerated. Although the mortality in the provinces compared with that in this city was notable, nevertheless it was not so great as to be considered as monstrous given the number of inhabitants. It has already ceased in most of the towns, and in others it is definitely in decline. I am sure you will join with me in praying, through Divine Mercy, for the freedom from similar afflictions of the towns of your dominion.

Letter received on August 26, 1787
Abstract logged in on August 29, 1787



Engraving of the Ágave Americano, or centaury, plant, often mentioned in colonial prescriptions. The drawing is the work of Don Francisco Xavier de Balmis.

Correspondence on the Discovery, Prevention, and Halting of Outbreaks of Typhus, 1797–1798

These documents describe the typhus epidemic of 1797–1798, one of nineteen to strike colonial Guatemala.[22] *They illustrate convincingly the importance of civil authorities in the war against disease.*

Francisco Xavier de Aguirre, governor of the province of Totonicapan, took charge of all activities in the town of Concepción—from establishing a new cemetery for typhus victims, to demolishing unsanitary temascals, to banishing healthy individuals until the epidemic had passed from the town. Among his many criticisms of the inhabitants—whom he characterized as "coarse and insubordinate"—was a devotion to "pagan" shrines, perhaps an ongoing legacy of El Rey San Pascual, whose worship had been outlawed generations earlier.[23]

Aguirre's efforts were accompanied by those of Dr. Toribio José Carbajal, official representative of the Royal Protomedico, José Antonio Córdoba. Carbajal brought to the infected province of Escuintla an impressive collection of remedies from the Guatemala City pharmacies, including cream of tartar, several tonics, absinthe salts, and sulfuric acid.

In life, property, and government expense, the cost of the epidemic was high. Approximately one hundred homes were ordered burned in the town of Concepción. The epidemic eventually spread to San Gaspar Chajul, Todos Santos, Cuchumatan, San Juan Atitan, San Sebastian, and Huehuetenango, resulting in the loss of 546 Indians, 130 of whom were male taxpayers.[24]

L.H.F.

Pharmacy display of the Museo de la Farmacia de Guatemala, Guatemala City

(Courtesy of the author)

This note treats of the town of Concepción, following the account made by Don Francisco Xavier de Aguirre, governor of the province of Totonicapan, to the President of Guatemala of the result of the personal inspection that he made of it and its territory. It presented the most pitiful spectacle worthy of compassion that one can imagine, because he could neither find a remedy to halt the illness of which it was suffering nor some Ladino person who would assist the sick. To this one must add that since the bad state to which the Indians were reduced did not permit them to excavate deep graves, the atmosphere was filled with the smell of corruption, which thus further spread the disease. It contributed not a little also to the neglect of the Indians in leaving closed the habitations of entire families that had died from the disease.

To halt these fatal consequences, the provincial governor, filled with compassion and disregarding the risk of losing his life, resolved to go personally to the town of Concepción and throughout its territory. Remaining there among the infected eleven days in order to investigate the causes of the epidemic, he gave appropriate orders for its extinction. Despite opposition from the Indians, he insisted that the dead be buried in a cemetery separate from the population, and ordered that those who were healthy should go to their fields. All the structures of the community, even the church, were of thatch and very close to each other. Therefore, although considered the best remedy, he decided not to burn the infected houses, for fear of setting the entire town aflame. Afterwards the Indians would not have been able to rebuild the settlement and thus would have remained scattered in tiny hamlets.

November 21, 1798. Madrid
Pedro Aparicis

✠ ✠ ✠

. . . With risk of life, I spent eleven days in this town and its infested territory with the aim of discovering the cause and origin of the persistence of the disease. I observed first of all that in the patio of the church and in the square of the shrine of San Sebastian there were buried more than two hundred corpses, leaving it very foul smelling; and [I observed] the same in the cemetery that, in spite of the repugnance of the Indians I had consecrated after the town was three quarters depopulated . . . [and I punished] severely those who opposed the said determination, jailing them for this reason. I also demolished the temascals, which they opposed. They did not make use of the said cemetery, as all were ill and could not carry the bodies any great distance. For the same reason, they had not made the graves very deep . . . as a result several cadavers were dug up by animals.

The town is situated on a peak of a forest that has more than a league of climbing, whose climate is very disturbed and cloudy because there is rain in all the months of the year. I recognized also that although the drinking water seems good, it is very scarce; there are only three or four springs on these peaks, with ponds in order to collect the water where also drink the animals, those who were healthy, and [those who are] sick—all of which can contribute to the occurrence of the said illness.

The houses where entire families have died left a smell that, upon opening the door in order to check what was inside, restrains all desire to continue the search. Since all these houses are so close one to another, there is hardly an alley without two or three [houses in which inhabitants have died]. In all, one can count only six or eight huts in which there were no deaths or ill, the healthy fleeing into the fields to escape the illness. Since the town hall, the house of the priest, and the church are thatched I could not . . . . burn the huts that are abandoned, since I would burn the entire town; I thus had to make the decision of ordering the [remaining] healthy into their fields. These hardly came to [the total of] two hundred of both sexes, including the infants. Now only remain the ill, and two [others] who care for the dying. My Lords, based upon what has been said, this place should be saved from the fire.

But this would end the Indians entirely, since they are a class of people so lazy and without understanding; instead of making new huts, they would return to live in

the infested, and perhaps with trade and contact could infect those other towns—as has happened in the case of San Martin Jacaltenango and San Sebastian Coatan, who have received some of those from Concepción. And in San Sebastián Coatan, where has died one of those from Concepción, they have expelled them and burned the huts and clothes of the dead in order not to infect their other houses; but even now in the said San Martin up to fourteen of the Indians have died for the same reason, the proximity of the town of Concepción.

One finds these [people of Concepción] the most corrupt on the royal road; they are the most coarse and insubordinate ones, to whom is attributed many robberies made of the royal road. Recently I discovered and destroyed a pagan shrine two leagues from the town where they went to offer sacrifices and pray to the devil, of which crime I provided an account to the Royal Audiencia. For all these reasons, not only ought we burn this town but the few remaining inhabitants should be divided among those of the towns of San Martin, Petatan, San Antonio, and Santa Ana Huista, which are on the royal road. . . .

March 8, 1797. Huehuetenango
Francisco Xavier de Aguirre

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Having inspected the huts of the sons of the town, I observed the lack of ventilation, little cleanliness in the clothes, use of the bedding of the dead, most of these being on the ground and the ground being very humid. Added to all this is the semi-starvation from which they suffer. The character of the fever seems of nature putrid. The type of symptoms are bleedings, discharge of gas, diarrhea, sweats, nausea, etc., without a fixed end in their crisis. The one recovering remains very weak and of those who relapse, most die. I have put into practice the method of Mr. Masdevalli: cleanliness, ventilation, raising the ill off the ground, their foods, etc.[25]

God guard Your Lordship for many years.

November 12, 1797. Jumaytepeque
Toribio Joséf Carbajal

We, the Judge, Mayor, and City Councilmen say that on this date Don Toribio Carbajal left for the capital, having been commissioned by the superior government and the Royal Protomedico; he extinguished the contagious fevers of said town and complied as a Christian in all the duties with his cures, which he had worked very completely with great zeal and effectiveness. Also, we have received from the said doctor the following medicines: a pound of saltpeter, one of sulfur, two pounds of cream of tartar, eight or more simple tonics, four ounces of absinthe salts, two pounds of camomile, two of borage, eight ounces of ammonia salts, one ounce of nitric acid, one of laudanum, one pound of ammonia salts, twelve pounds of opiate, eight ounces of sulfuric acid, a small pot for the collection of urine, four ounces of camphor, two pounds of powered quinine, and two bottles of wine. The said Doctor has placed by charity, from his own money, other medicines and the two bottles of wine; and we affirm [all] this with our signatures.

November 23, 1797. San Francisco Jumaytepeque
Francisco Solivera, Joséf Bonilla (Mayor), Ylario Péres (Town Scribe)

✠ ✠ ✠

By the attached certificate of the judge and officials of Jumay, one can confirm the zeal and credit with which I devoted to the service of this town infested with fevers whose extermination I was responsible. I am requesting travel expenses, eighteen days of going, coming, and being there, plus the six pesos paid from my own funds for the delivery of the medicine. . . .

November 25, 1797. New Guatemala
Toribio Joséf Carabajal

✠ ✠ ✠

I notify Your Lordship that I have ordered paid the said Practitioner the 114 pesos that he had earned, 108 of them for his subsistence at a rate of 6 pesos for each one

of the 18 days of his expedition and the other six for the delivery of the medicine.

November 27, 1797. New Guatemala
José Antonio Córdoba

Receipt for medication for the town of San Francisco Jumay, dispatched upon the order of the President [José Domas y Valle] and under the direction of Doctor Don Joséf Antonio de Córdoba, Protomedico of this kingdom.

12 pounds of opiate of *Masdeval,* at
six pesos a pound = 72 pesos
1 pound ammonia salts, in powder, at
8 pesos a pound = 8 pesos
6 ounces sweet sulfuric acid, at
4 reals an ounce= 4 pesos
One sulfuric acid container = 1 pesos
Three large and one small jar = 2 pesos,
6 reals

Total = 87 pesos, 6 reals

Approved Córdoba

✠ ✠ ✠

Don Francisco Ramirez, our apothecary in this capital, has provided the attached receipt ordered by Your Lordship and under the direction of the Protomedico Don Joséf Antonio de Córdoba sent it to the practitioner who was in the town of San Francisco Jumaytepeque.

November 28, 1797. Royal Palace [New Guatemala]
Ignacio Guerra

✠ ✠ ✠

List of those who have died from the epidemic in the town of San Francisco Jumaytepeque: 12 adult male taxpayers, 19 adult married women, 4 tax-exempt males, 4 infants, and 3 widowers = 42.

There remains as a result of the death of both parents, 20 orphans, most no more than 10 years of age. Out of the 270 ill, there were 39 deaths, making 231 who were cured.

December 30, 1797. San Francisco Jumaytepeque
Francisco Solivera

Account for the expenses made upon the order of His Lordship, the President, for the food of the sick children of this town of San Francisco Jumaytepeque . . .

16 pesos 4 reals for a container of wine
requested by the Doctor
9 pesos for 2 arrobas of sugar, at 4 pesos
4 reals each
9 pesos for 3 dozen chickens, at 2 reals
each
1 peso of white honey
1 peso of bread
[TOTAL] 36 pesos 4 reals

December, 1797. San Francisco Jumaytepeque
Francisco Solivera and José F Bonilla (Mayor)

✠ ✠ ✠

In response to the commission that Your Highness conferred on the 6th of the past November for the extinction of the plague of typhus that attacked the inhabitants of the town of Jumaytepeque, I have the satisfaction of giving notice to Your Highness that from the 30th of December of the past year all are healthy and there is no risk to the inhabitants of the indicated town. . . . There remain in my care 20 orphans, must of whom are 10 years old and lack any hope other than the protection of Your Highness.

Also the justices and notables of the town have requested that I inform Your Highness of the total decay caused by the illness and that you remove from the tax rolls the twelve dead taxpayers. . . .

January 8, 1798. San Francisco Jumaytepeque
Francisco Solivera

Correspondence on the Discovery, Prevention, and Halting of an Outbreak of Smallpox

Smallpox was the most devastating scourge that struck the Spanish Indies, not merely for the deaths that it caused—although those were quite enough to reduce the population drastically—but also for the blindness and other disabilities it brought to its victims. In eighteenth-century Europe, smallpox was said to be responsible for thirty-five out of every one hundred blind.[26] *Doubtless, the impact was equally severe in Guatemala.*

The smallpox epidemic of the early 1780s caused the most fatalities. In Totonicapan, as much as 25 percent of the population died; in Amatitanes, more than ten thousand Indians perished. Coban, in the Verapaz, had a population of 8,524 in 1778, but only 5,917 six years later.[27] *Following the epidemics, the hardships of famine and starvation were so great that taxes were excused for up to a year for many affected communities in the province of Chiquimula. In Coban, more than ten years passed before the population returned to pre-epidemic levels.*[28]

The smallpox epidemic of 1794 originated in Chiapas, at the western edge of the Kingdom of Guatemala, and raged for two years. The disease was introduced at least twice from Chiapas into Totonicapan and Quetzaltenango.[29] *Prompt quarantine and inoculation kept the mortality rates low.*

A truly remarkable series of Protomedicos directed the effort: José Felipe de Flores (1793–1796), José Antonio Córdoba (1796–1804), and Narciso Esparragosa y Gallardo. Flores had earlier distinguished himself in the study of cancer; Córdoba had written an outstanding paper on leprosy; and Esparragosa had designed an elastic whale bristle fillet intended to save infants from the murderous deliveries of iron forceps.[30]

Those conscientious and persistent observers had other professional duties in addition to the scientific. Their private practices were most demanding when an epidemic was in progress; and they were also bound by the official duties of their office as well as the responsibilities of a professorship in medicine at San Carlos University.[31]

In health crises, both the private doctor and holder of the office of Protomedico were on the fringes of efforts to save the population. The program of inoculation in Totonicapan was led by the royal governor of the province of Totonicapan, Don Francisco Sabastian Chamorro. As can be seen in the documents printed below, medical experts played an important role in drawing up "instructions" and administering help to sick, but they did not have leading authority in medical matters and emergencies. The war against disease was too

important to be left to private individuals.

Inoculation

Inoculation was the great eighteenth-century defense against smallpox. Inoculation was accomplished "by inserting pus or powdered scabs containing smallpox virus from a previous patient into the skin of a susceptible person in order to deliberately cause an infection. A person infected artificially in this manner . . . ordinarily developed an illness and rash milder than usual."[32] *The procedure carried a risk of death of between one and three percent.*

According to historian John Tate Lanning, inhabitants of the Spanish Indies showed "a penchant for accepting inoculation." They had, he said, "a confidence in the possibility of the discovery of a remedy, particularly a botanical remedy" for smallpox. "In contrast to the French, who were slow and indifferent to inoculation and finally suspended it, the Spaniards showed the same hopefulness and some of the alacrity that [later] marked their quick use of vaccination."[33] *According to Chamorro, of the 2,895 children who were inoculated in the province of Totonicapan, only seventy-eight died; while 3,774 who were not inoculated lost their lives.*

Thus, in the last quarter of the eighteenth century and first quarter of the nineteenth, Guatemala advanced to the forefront of medical research.

The documents printed below show that progress. At first, as the reports detail, the Indians "shuddered upon seeing the lancet" and feared that the Spaniards were "going to kill the children." The same Spaniards were later hailed with "the ringing of bells, the throwing of flowers" as villagers came to realize the value of the treatment.[34]

L.H.F.

Copper distiller from the Museo de la Farmacia de Guatemala

My Lord: The plague of smallpox was introduced to the town of San Mateo Ixtatan of my parish of San Pedro Soloma after February of this year by natives of the said town of San Mateo who went to the lowlands where they made their fields near the town of Comitan in the Province of Ciudad Real and from the same region to that of Santa Eulalia. There were young Indians who had not had smallpox previously, resulting in the spread of the disease in this parish by the end of last July.

In spite of both the repeated orders of the governors of these provinces who want to comply with the suggestions of the doctors and the orders of Your Lordship (which have notoriously and frequently notified all these towns with regard to procedure relative to this problem), the Indians are without understanding and did not take the proper safeguards to prevent the spread of the disease nor did they advise proper authorities of its existence.

JOSE FELIPE FLORES
Protomedico from 1793 to 1796

In this situation it was necessary for me to advise the government of the need to introduce the operation of inoculation to the native children of both sexes of the town of San Mateo and continuing with the same arrangement with those of the town of Santa Eulalia. It had the result of making the operation without any cost so that the terrible threat to the poor children could be halted. I verified that 260 were inoculated with the result of preventing the death of many infants and children. Upon the conclusion of this operation on the entrance of the experts into these towns on the 17th of last August safeguards were established to completely isolate them . . . but nevertheless the contagion passed to San Juan Iscoy (being a distance of three leagues), by the end of September, and from Santa Eulalia to the towns of San Sebastian and San Miguel Acatan, the first only five leagues distant and second about eight . . . arriving at Jacaltenango (which is the same distance from the last), where it was finally halted by the experts from the 28th of September until the 4th of this October . . .

San Pedro Soloma, October 12, 1795
Domingo González (priest of the parish)

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Method of Inoculating for Smallpox Among the Savage Mams and Pocomams [Popoti] Who Live Near the Forests of the Wild Lacandons in this Colony of Guatemala

Only after great difficulty was it possible to convince Indians—so obstinate and superstitious—of the unutterable benefit of inoculation. But beyond their customs, they shuddered upon seeing the lancet, saying that in this operation I was going to kill their children.

The following procedure was followed:

1. In the principal plaza of the town were assembled all those born, up to the age of 15, since the last epidemic. Here their hair was cut in order to make them less susceptible to the illness, and there the parents moaned upon seeing it cut. [The text clearly states that the hair—*pelo*—was cut, but perhaps the author meant to write *piel*, which means skin.]

2. They went from here to the hospital, in order to be inoculated. Here reigned the most confusion. Armed, in a loud voice mixed with many tears, two thousand threaten me [with harm] if their children died.

3. Taking the child in her arms, and showing it in the forests while burning much copal, she begged the hills for the health of the child. Afterward they would go to the church, asking the town saint to keep it from harm.

4. The mother would go on her knees, bless the eyes, and avert her face upon presenting the child to the inoculator. And then the child—feeling the incision of the lancet—would cry; and everyone would repeat their threats if this cure of the Castilans, for thus they call the Spaniards, killed their children.

5. Some four or five days after, the terrible symptoms of the illness began. They surprised me with their cries, asking me to cure the fever that now was killing their children; and I began to think I would be victim of these barbarians. But God granted that of the inoculated no more than seven or eight died.

6. Afterward I returned to the towns to fumigate the houses with sulfur and take other precautions in order to be sure of completely destroying the illness. I was not received as before, but with the ringing of the bells and the throwing of flowers. It was pointed out to me that those marked by the smallpox were few. They raised their hands to heaven and, in their unpolished style, gave thanks to the King for saving the life of their children. But what impressed on them was the operation with the lancet, which they called the diabolical craft of the Castilans.

I have made to Your Excellency this picture in order that you may obtain an idea of the barbarity of the Indians and of their scant instruction. What one sees and hears causes horror and compassion for their soul, body, and dress, and they are worthy of pity.

New Guatemala. February 3, 1798
Francisco Sebastian Chamorro

✠ ✠ ✠

August 19, 1795

President Don José Domás y Valle, Your Lordship: Then, as I had indicated previously, I established the inoculation and the method of curing in the infested towns of the parish of Soloma and cut the communication with those not infected. Then I moved to the parish of Jacaltenango—the head town of the parish where the father priest assured me that the epidemic had resulted in the burial of more than one hundred and thirty—to attack unfailingly the cause of these deaths. I then ordered the justices and calpules, or heads of the neighborhoods, to appear so that they would learn the reason for my coming. I informed them that Your Lordship, knowing of the terrible havoc made by the epidemic in their towns and wishing to free their sons from its death, and ordered them inoculated and an apothecary [sent] for their cure.

Not unhappy with this, they answered that word had been received that the natives and their children of the parish of Soloma had been freed from death with the remedies of the Spaniards that Your Lordship had ordered; and that therefore they would present their children for inoculation. This I verified, for one thousand two hundred and four were so treated, with such good results that all were freed from risk. The few who died were due to the barbaric custom of bringing them close to the fire.

The orders against communication of the said infected parish capital with the others were enforced with three salaried guards, each being paid twelve pesos monthly. One was stationed in the hamlet called The Knife, the other in a pass called Window of Pilate, and the other on the bridge of the San Marcos River. Each of these guards was accompanied with two local ladinos, they being salaried with a real each day and with an Indian. I hope

that Your Lordship will approve these expenses, which are indispensable for the isolation of the contagion and which, I hope to God, will not spread, thanks to these measures.

The epidemic, after causing several deaths in the town of San Antonio of this same parish, had ended, but this was not due to the effect of the inoculation, which had arrived late. The town being a small place, one of those that gave assistance to the royal road, the deaths were strongly felt here.

Today I have inspected the border of the Intendency, reviving the order that no one could pass from the infected towns of Chiapas.

I have spoken with the priest of Escuintenango, first parish of the bishopric of Chiapas, who assures me that all the towns and farms adjacent to my province have already had the smallpox. Now I know the mistaken idea in which it is said that perhaps the infected air could propagate the epidemic, because these towns and farms are five and eight leagues apart beyond any communication (in this matter I have worked from the month of October [1794]). I have not experienced firsthand the epidemic in the towns of the royal road; and, yes, it appeared in those of Soloma by a rare introduction, forty leagues distant, as on the other occasion I have informed Your Lordship.

I finished my reconnaissance of the entire royal road, returning to the parish of Jacaltenango and that of Soloma to check on the guards I had placed as well as to examine the houses and furniture of the Indians who apparently all were recovering and whose diligent inoculation I will give an account to Your Lordship.

Each day I see more the obvious benefit that Your Lordship had for these unhappy Indians, and I remain persuaded that if Your Lordship had not decided to order the isolation of the contagion that the entire Kingdom would now be infested. I equally say to Your Lordship that if the inoculation and curative procedures were not put into effect already all these towns would have been annihilated, as had happened with those of the Guistas of this same parish of Jacaltenango in the previous epidemic of the year eighty! Happy Kingdom that, in the present epoch threatened by a terrible blow, has for its chief a minister so good a servant of the King who may be seen from his measures to have a most conscientious policy, thus conserving for His Majesty the numerous towns that have been placed under his protection.

May Our Lord give Your Lordship many years.

Santa Ana Guista. August 19, 1795
Francisco Sebastian Chamorro

✠ ✠ ✠

October 3, 1795

I, Friar Joséf Camposeco y Lorenzana, Retired Preacher of the Holy, Royal and Militant Order of Our Lady of Mercy, vicar and priest of this parish of Nuestra Senora de la Purificacion Jacaltenango, certify that the Alcalde Mayor Don Francisco Sebastian Chamorro, ordered by His Lordship the President to isolate the contagion of smallpox and [provide] inoculation, from the month of November of the past year of 94, has visited three times the towns of the royal road, making effective the orders of the Lord President; and has proceeded with such disinterest that he has not burdened the towns of my parish not even with the expense of a single chicken, for he has paid the Indians, taking his expenses from the custom duties; and upon staying in the infested towns, he has refused the gifts of chickens and other things Indians normally made to their Governor.

This I do affirm here in Jacaltenango on the 3rd of October of 1795

Fr. José. Camposeco Lorenzana

✠ ✠ ✠

October 12, 1795

I, Friar Joséf Camposeco y Lorenzana, Retired Preacher of the Holy, Royal, and Militant Order of Our Lady of Mercy, vicar and priest of this parish of Nuestra Senora de la Purificacion Jacaltenango, certify that in the two towns of this parish, San Antonio and Purificacion Jacaltenango (which is the capital), those who were

Fuentes y Guzmán's sketch of Ixmiché, the Cakchiquel capital before the Spanish conquest

infested with smallpox are now entirely free of this disease, and all Indians are now recovering from it. Their clothes have been washed and houses fumigated with sulfur, and the roads are closed with the same guards as before.

This I do affirm here in Jacaltenango on the 12th of October of 1795

Fr. Joséf Camposeco Lorenzana

✠ ✠ ✠

State of the children who suffered from the infection of smallpox in five towns, three of the Parish of Soloma and two of Jacaltenango in the most northern part of the Province of Totonicapan and bordering the Province of Chiapas from where came the epidemic in this year of 1795

Towns

San Mateo Ixtatan. At this town, which is of the parish of Soloma, the inoculation arrived late and was resisted but had some benefit. There were 604 children infected, 140 inoculated, 9 of whom died—while 155 without inoculation died, 2 were blinded by the plague, and 440 escaped injury.

San Antonio Huista. In this town, of the parish of Jacaltenango, the inoculation arrived late and no one was so treated. There were 85 children infected, 62 deaths, 3 blindings, and 23 who escaped injury.

Santa Eulalia. In this town, of the parish of Soloma, all except 122 were inoculated. There were 1,555 children infected, 1,433 children inoculated (38 of whom died while 98 without inoculation died), 5 blindings from the plague, and 1,419 who escaped injury. Of the inoculated, only 23 had fever, although others in their homes suffered more grievous injury. Of the remainder, the inoculation resulted in very irritated abscesses without any fever; and in the end two of them died.

San Pedro Soloma. The capital of its parish, a small town, where all the children were inoculated. There were 109 children infected, of whom 7 died, leaving 102 free of any injury. In this town there was an Indian who refused to allow his 24-year-old wife, who in the previous plague had not had smallpox, to be inoculated. She was checked three times afterward; in the first and second times she remained in good health, but was sick upon the third inspection and died within forty hours.

Purificación Jacaltenango. The capital of its parish where it was not possible to inoculate everyone. There were 1,421 infected children and 1,213 inoculated—of whom 24 died, 149 deaths of those without inoculation, 6 blinded from the disease, and 1,248 who escaped injury.

In summary, a total of 3,774 children were infected, 2,895 inoculated, 78 deaths of inoculated children, 464 deaths of children without inoculation, 16 blinded from the disease, and 3,232 who escaped injury.

Dated in Totonicapan on the 19th of October of 1795

Francisco Sebastian Chamorro

✠ ✠ ✠

October 26, 1795

President Don José Domás y Valle, Your Lordship: It was not prudent to assure Your Lordship that the contagion of smallpox is suppressed in this province under my rule, because it could, for some innate cause, return to take root; but I can give to Your Lordship the commendable notice that each day one observes more and more that with the susceptibles your decisions have exercised the hoped-for effects. Already in the isolation and already in the inoculation, for one can see that in the first, with isolated towns of San Mateo, Soloma, and Santa Eulalia [the smallpox] has not spread to the other three of the parish, and if it is transmitted to Jacaltenango, it is stifled in the parish capital. And in the part inoculated, the effects are more energetic. So reduced is the ravages since the practice of inoculation, one can say that the Indians are right in saying that the operation that cuts short the calamity is by diabolic Spanish arts. Hardly a fifth of those who caught the disease remain alive, and this without lacking the help of other medicines. But those with inoculation all remain free of it, and only four percent of the inoculated died on the attached listing sent to Your Lordship. Although in all the five towns,

more than a thousand of the adults are victims of typhus and other illnesses that are part of the same epidemic, they cure it happily with what they get from the pharmacy and the practice of inoculation, which exactly assists it. And as the Indians give positive experience from one to the other, it will help overcome the reluctance; and although the disease continues, it will not have any importance. Nevertheless, the five infested towns remain entirely free; and yet no suspicion exists that they have transmitted the disease to others because they have halted it as verified in the certifications of the father priests as duly noted in the attached papers. The isolation still exists and will continue in all its force—not for only forty, but sixty days—in order to be sure that the epidemic is entirely extinguished.

This happy success I prophesy, and I promise that I will some time have the satisfaction of informing Your Lordship that it will be the result of the tireless hard work of the experts. Vigilance and devout intentions will have the happy result of freeing the kingdom [from this plague].

With such happy results, and considering each day being closer to the arrival of my successor, urgent needs of this court require that I return [to the capital of the province]. Now, seeing the most careful precautions, I leave well assured that the safeguards and those in charge are ready to take all necessary measures on which we will advise Your Lordship.

May Our Lord guard the life of Your Lordship many years.

Totonicapan. October 26, 1795
Francisco Sebastian Chamorro

Copper bowl from the Museo de la Farmacia de Guatemala

The Vaccination Crusade Against Smallpox, 1798–1804

The discovery that vaccination with coupox produced immunity to smallpox was first published by Edward Jenner in 1798. In vaccination, vaccinia *virus was inserted into the skin to cause an infection. As historian Donald R. Hopkins relates: "Like inoculation, a successfully vaccinated person developed a rash only infrequently and in any event could not spread smallpox to others, unless he had been infected with smallpox just before the vaccination took effect. . . . Properly performed, vaccination only rarely caused the death of a vaccinee." The* vaccinia *virus was obtained from cattle, hence the name for this infection was "coupox."*[35]

Jenner's methods found an enthusiastic champion in King Carlos IV of Spain, whose children had survived the smallpox epidemic of 1798 due to inoculation. In 1803, as smallpox was appearing in the colonies, Carlos IV made vaccination a royal project. Dr. José Felipe de Flores, physician of the King's Chamber and former Protomedico of Guatemala, was instructed to study the problem. Flores's report, submitted on February 28, 1803, called for an expedition that would convey the vaccine to the New World.[36] *Weeks later, the King informed the Council of the Indies of his desire to carry out such an expedition. On March 22, the Council approved Flores's recommendations,*

***Vaccination illustration from the* Gazeta de Mexico**

and throughout April and May the details were finalized.

The plan included the vaccination of several orphans, who would serve as hosts for the virus. Under the direction of Dr. Francisco Xavier de Balmis, the final expedition numbered three assistants, two practitioners, three male nurses, a secretary, twenty-two male orphans, and a nun who cared for them. On November 30, 1803, the Balmis expedition set sail from La Coruña

aboard the Maria Pita.[37] *For Guatemala, however, the expedition was too late; the coupox virus had already been delivered to Central America thanks to the remarkable perseverance of Esparragosa and other doctors.*

Historian John Tate Lanning's examination of the Gazeta de Guatemala *for 1802 and 1803 indicated that "almost every issue described frustrated attempts to acquire the virus from Spain or the United States, the latest vaccination instructions, excerpts from European journals discussing the serum, and articles extolling its benefits."*[38] *In 1803, with a new epidemic threatening the island, the governor of Puerto Rico had obtained the virus from the island of St. Thomas in the Danish West Indies. From Puerto Rico the vaccine arrived, early in 1804, in Cuba. That same year, a few weeks before the Balmis expedition reached the Mexican mainland, a warship brought the vaccine (via vaccinated crewmen) from Cuba to Mexico. Don Ignacio Pavón y Muñoz, a native of Guatemala City residing in Veracruz, obtained the virus and, sealing the lymph between glass slides, sent it on April 22, 1804, by special courier to Guatemala City, where it was received twenty days later.*[39] *As Michael Smith relates:*

> Esparagosa's diary records the suspenseful preparation of the lymph, "a little speckle the size of a fly's wing," into a diluted form of vaccine. Assisted by the Protomedico, José Antonio de Córdoba, he began by pricking the upper arms of six children with the vaccinating needle:
>
> During the first few days, the vaccination lesions exhibited no signs of normal development. Perhaps, some thought, the vaccine had deteriorated during the three-week journey from Veracruz. Yet Esparragosa did not lose hope. Then on the seventh day, one small vesicle appeared on Alfonso Wading's right arm. In order to observe its development more closely, Esparragosa y Gallardo moved into the Wading home and kept the boy under constant observation. . . .
>
> Esparragosa would not be convinced that the operation had been successful until he had lanced the vesicle and examined the base of the lesion. This he did, assisted by José Antonio de Córdoba, on May 25. As soon as he removed the thin layer of skin covering the vesicle, Esparragosa observed "a small amount of very clear, transparent fluid . . . as the white of an egg." Before probing the source of the fluid, he inoculated twenty more children. He then scrutinized the lesion with a magnifying glass. Examination revealed that Wading, indeed, had a true vaccination.
>
> On May 28 the vesicle partially filled again with the precious lymph, and Esparragosa

The children of King Carlos IV of Spain were inoculated during the 1798 smallpox epidemic. Thereafter, he became a champion of vaccination in the New World.

vaccinated seven more children. Three of the seven inoculations proved effective. On the same day the *Gazeta de Guatemala* reported that all twenty children vaccinated on the twenty-fifth were progressing satisfactorily. These successful operations assured an adequate source of vaccine.[40]

Esparragosa and Córdoba quickly instructed physicians, students, and non-professionals in the use of vaccination techniques. Córdoba even used his recently vaccinated seven-year-old daughter as an agent, taking her to each convent and monastery in the capital. Utilizing the lymph from her mature vesicles, he inoculated several individuals in each place and trained the nuns and monks to perform the operation within their own religious communities. Vaccinations were held every nine to eleven days, and by June 23 an estimated four thousand persons were treated in Guatemala City and its immediate surroundings.[41]

On June 17 the City Council sponsored a special ceremony in the Cathedral to give thanks for the efforts. In attendance were the President, the the Archbishop, the faculty of the Royal University, members of the Royal Audiencia, and civil and religious dignitaries.[42]

Thanks to private individuals, the vaccine soon reached the provinces. Esparragosa himself led a private expedition to Antigua Guatemala, the old capital, where, with the aid of the Spanish governor, he identified the immune and non-immune, divided the city into wards, and established vaccination centers. In less than a week, he had vaccinated all susceptible citizens in the city except nursing babies and the infirm. He also trained Dr. Mariano Fernández and Dr. Santos Alesio Coseros to continue the vaccinations.[43]

The vaccine, with instructions for use, reached Solola, Quetzaltenango, Chiquimula, Verapaz, and Totonicapan. In view of the problems that officials had experiences in these villages while treating epidemics of typhus and smallpox, it is no surprise that Dr. Ignacio Ruiz de Cevallos encountered in this last province considerable resistance "from stupid, ignorant Indians and even some whites."[44]

An emissary from the Balmis expedition finally reached Guatemala City late in 1804. There was very little for him to do, however. Local practitioners had delivered the vaccine to "even the remotest parts of the captaincy general."[45] *But the journey was not entirely in vain, since Balmis delivered instructions for the creation of a central vaccination board in Guatemala. Together with the Archbishop and a representative of the Audiencia, the Protomedico Córdoba drew up these instructions for an agency suited to colonial conditions.*[46]

L.H.F.

LAWS FOR THE PROPAGATION AND ESTABLISHMENT OF THE VACCINE IN THE KINGDOM OF GUATEMALA

ARTICLE I. THE CENTRAL COMMITTEE

Name and Duties

1. In the Capital of the Kingdom will be formed a Committee, which will be called Central, similar to the establishments in other places. Its duties will be: (1) The propagation of the vaccine in all the districts of the Captaincy General; (2) the keeping of the vaccine fluid in such a manner that it will never be absent in the said district; (3) [the recording of] observations and new discoveries in the use of the vaccine that can result in benefits to public health.

Members

2. It will be composed of three permanent and three elective positions plus a secretary.

Permanent Members

3. Permanent members, now and in the future, shall be the illustrious Lord Archbishop, the Regent of the Royal Audiencia, and the Protomedico of this kingdom.

Elective Members

4. Elective members shall be an individual of the Ecclesiastical Council, another of the City Council of the Capital, and a Professor of Medicine or Surgeon other than the Protomedico.

Nomination and Length of Service

They shall serve two years and may have their terms extended for a longer length of time. The first members shall be named by the head of the government. Afterwards the Central Committee shall elect them based upon the vote of a majority of its members.

The Secretary

5. The Secretary is a permanent position. With just cause, that the committee will determine, he can be removed or exonerated. The rules for his nomination will be the same as for the elected members.

Duties and obligations of these offices

6. The duty of these offices is equal in importance to their objective. They are interested in discharging the paternal concern of the King, the public health (for which all ought to sacrifice), the common good of humanity (and in particular of this country, more than others), and especially with regard to the cruel ravages of the whip of smallpox. No one can be excused from accepting and serving. Neither should there be for it any salary or compensation.

Announcement of the nominations

7. The Head of the Government will, upon the first nominations, so inform the members of the committee. Subsequent nominees will be so informed by the presiding officer of the committee and without any other formality begin the exercise of their duties in the next session of the committee.

Substitutions

8. If, in the two-year period, one of the members is absent due to death, or a similar cause, they can substitute without delay, electing another person to the appropriate position; but only for the remainder of that two-year period, at the end of which there will be a normal election. The substitute member can then be elected for the subsequent two-year period.

Vacancy in the Archbishopric

9. In case of a vacancy in the chair of the Archbishop, his seat will not be filled by a substitute; but his functions will be exercised by the Lord Regent of the Audiencia or by the representative of the Ecclesiastical Council, according to the instances and circumstances.

Vacancy in the Regency

10. The Lord Regent will be replaced by the most senior member of the Audiencia, or that one next in line, if he is vacant due to absence or a legitimate reason.

Vacancy in the Protomedico

11. The lack of the Protomedico, for whatever reason, will prevent the holding of committee meetings. He should be replaced by the most senior Professor of Medicine other than that one already on the committee; or if by him, another member will need to be elected to replace him in such a manner that there always will be two medical specialists on the committee.

Advice on the substitutions

12. Owing to the need for consideration by the permanent members in the instances requiring substitution, the secretary will so advise members of the committee in writing. The member, whoever will need a substitute, will so advise the secretary explaining why and when the substitution will take place.

Presiding officer and location of the committee

13. The Illustrious Lord Archbishop will preside over the meetings of the committee whenever his other more important duties permit. The committee will hold its sessions in his palace. When the Illustrious Lord has just reason to be absent, he will so advise the Lord Regent, who will take over his duties; the committee will then be convoked at his house or at that of the most senior member of the Audiencia as so established above. The same procedure will be followed with regard to the presiding officer and location of the meetings in the case of a vacancy in the chair of the Archbishop.

Weekly sessions at first

14. At the beginning, until the majority of individuals in the capital and its surrounding areas have received the benefits of the vaccination, the committee will meet each week. The day and hour will be marked by the members in the first session. The presiding officer can always convoke extra sessions when it seems necessary.

After each 15 days

15. The committee will vote and advise the government when the first part of its task is completed—that is, when the vaccine, as established by the diminishing of the vaccinations, has been disseminated within the borders of its jurisdiction and there is a need only to arrange for a permanent supply of it. Thereafter, in order to ease the burden of the members, it is agreed that there would be no need to have a session more than once each fifteen days; however, there never will be more than fifteen days between sessions.

Equipment they have for treating it

16. They will discuss in the committee everything necessary for discharging the tasks in the three parts indicated in Section 1. In each session the minutes of the previous session will be read. They will express their observations, be they medical or economic. They will read the correspondence with the provincial committees. They will confer commissions and nominate vaccinators. And they will discuss all points relative to the progress and permanent supply of the vaccine, find means and arrange for its execution, simplifying the operations whenever possible.

Books of the Secretariat

17. The secretary will be responsible for three books: (1) on the minutes of the committee; (2) on special observations made outside of the kingdom, in which will be extracted all mentioned in books or public papers, ultimately including those in the treatise of Moreau de la Sarthe;[47] and (3) on the observations that have been or will be made in this capital and its provinces. There always will occur new observations of one or another type. The first committee should read about and discuss them. It being important to correct them, they should make experiments and in time make their results known to the public.

Correspondence with provincial committees

18. The correspondence between the Central Committee and those of the provinces should be through their

respective secretaries. It should be well organized in separate files. In the book of minutes there should be a brief abstract of contents and general notices, with reference to the papers and the official numbers with which they should be marked. New observations should be recorded in the appropriate book as well as mentioned in the minutes.

Logbook of vaccinators

19. Information given to the committee on the number of vaccinators should be abstracted in another book or logbook, which will be divided into sections noting those in charge of the vaccinations, their names and the towns or wards that are their responsibility and an abstract of their reports.

Biyearly report to the Government

20. Each six months the committee, through its presiding officer, shall notify the Government with regard to the number of vaccinators, with a copy of the abstract from the previously noted logbook, and another brief abstract from its minutes in which is noted all its activities in that six-month period. Whenever it seems convenient, from one or both, the abstracts will be inserted in the official gazette of this capital, the secretary of the committee taking care that only well-established information be made public and he being responsible for checking the page.

Expenses of the Secretariat

21. Sworn statements for office expenses are transmitted by the secretary every three months, or sooner if more convenient. The government will, at its convenience, advise the committee with regard to which department to issue payments on vouchers.

Decisions of Government

22. The government will communicate its decisions to the committee by means of the presiding officer and, as necessary, he will name one of the members to reply and represent the committee.

ARTICLE II. PROVINCIAL COMMITTEES

Leon, Comayagua, and Ciudad Real

23. In each of the Episcopal cities—Leon, Comayagua, and Ciudad Real—there will be formed a provincial committee of vaccine, which will be composed of the Illustrious Lord Bishop, the Lord Governor, a member of the Ecclesiastical Council, another of the city council, a physician if they have one, and a secretary.

Permanent members and their substitutes

24. The two first positions will be permanent or perpetual. In the absence of an Illustrious Lord Bishop, the Lord Governor will preside. He can be replaced by a lieutenant with a college degree or whoever is exercising the powers of the Governor.

Elective members-Idem

25. The length and duration of the terms of elected members and their substitutes will be as indicated in Sections 4 and 8 of Article I, with the only difference being that after being first nominated they can be elected by their respective provincial committee.

Fourth member in Comayagua

26. In Comayagua, where there is no city council, the fourth elective member can be an honorable prosperous citizen or a priest who does not have a parish.

Designating vaccinators where there are no physicians

27. Up to now there are no physicians in Comayagua nor Ciudad Real, nor are there any in Leon. This absence therefore may be filled with a specified vaccinator in each locality where sits a committee, as per Sections 99 and 100 of Article VII. This vaccinator has only an advisory vote in the committees but his assistance to them will be indispensable. Without his presence they cannot resolve any medical point.

Settlements with city councils

28. In capitals of provinces where there are city councils but no Bishop or Ecclesiastical Council or in those with neither or [those that are] very small or have no

Spanish residents, the committees will be composed of the following. In San Salvador, Costa Rica, Sonsonate, and Quetzaltenango: a governor, an Ecclesiastic (other than the parish priest or parish administrator), an alderman, and the physician or vaccinator of the territory. Except for the chief of the province and vaccinator (who remain on the committee as long as they fill these positions), those appointed are elected on an annual basis.

Branch committees outside provincial capitals

29. In the settlements that without being capitals of provinces have city councils, or have a sufficient number of Spaniards—like San Miguel, San Vicente, Santa Ana, Tegucigalpa, Nicaragua, Comitan, Ahuachapa, and others of this type—in order to facilitate operations they can establish committees that they call Branches, which will be dependent upon that of the province of which they form a part. The establishment of the branch committees, as well as the number, kind, and election of their members is the responsibility of the provincial committees, since they are their helpers.

In provinces without city councils

30. In the provinces of Chiquimula, Verapaz, Zacatepeques [elsewhere called Amatitanes and Sacatepequez], Escuintla, Chimaltenango, Solola, Totonicapan, and Suchitepequez, the chief of the province, the parish priest of the capital, and the specified vaccinator are the permanent members of the committee formed there and can, as circumstances require, select others. The Central Committee, basing themselves upon reports, can elect two other members (where there are appropriate individuals) and remove them as necessary.

Duties

31. The duties of these provincial committees is the same as that of the Central Committee (Article I, Section 1), with which they correspond by means of their respective secretaries. They will communicate on the vaccination, the methods adopted for the establishment or perpetuation of the fluid, and the observations that they make, proceeding toward this end whenever it seems easy and without inconvenience.

Each four months to the Central Committee

32. Each four months they will send to the Central Committee an extract from their minutes, in order that they can report on the previous half year to the government (Article I, Section 20) and present, when verified, news to the public. With this abstract should come a report on those vaccinated from one four-month period to another, noting census classes, towns, and political divisions. [Census classes include widow, widower, unmarried, married, and exempt from paying taxes.]

Common laws

33. The laws given for the Central Committee in Sections 5, 6, 7, 8, 9, 14, 15, 17, 19, and 21 apply also to the provincial committees, with appropriate modifications in so far as the circumstances vary.

General measures

34. The orders of the government that are appropriate to all will be communicated by means of the secretary of the Central Committee to those of the provinces. By the same means they can petition the government when it seems convenient so that all would act in conformity to these laws as a single entity in complete understanding of their significance.

ARTICLE III. PROPAGATION OF THE VACCINE IN THE CAPITAL

Weekly vaccinations

35. The practice will be continued, which with praiseworthy zeal has been established by the Protomedico, of making weekly vaccinations in order to conserve the fluid and extend its preservative virtue. But although many have been vaccinated in the capital and its surroundings, still many more lack vaccination. They should come to receive this necessary benefit, which will require only one brief visit, in order to remove or avoid totally the risk of a smallpox epidemic.

Censuses of the vaccinated

36. The judges of each ward, by Section 12 of their instructions, ought to prepare each year a census of the inhabitants. When prepared, according to the requirements explained below, each house or family should be designated vaccinated or not vaccinated. In order that these censuses be uniform and not previously collected obscure information, they will follow a single format that the judges will receive from the Secretariat of the government.

Ecclesiastics commissioned to assist in their preparation

37. Each judge of the ward, in fulfillment of the previous section, will be accompanied at times by an Ecclesiastic, in order that the survey will be completed with such formality and circumspection as to inspire confidence, as well as to instruct the inhabitants of its important objective and to expose false ideas that could result in inexact censuses.

Nomination of Ecclesiastics

38. Nomination of Ecclesiastics will be made by the Illustrious Lord Archbishop from among the friars and priests of the capital, excluding only the parish priests and their assistants.

Problems

39. Problems that occur in the preparation of the censuses will be referred to the Lord Regent for resolution.

Completion of the censuses

40. Censuses will be completed within two months from the publication of this Regulation, in order that each judge can send the completed census of his ward to the Secretariat of the government.

Voucher for the cost of the prepared paper

41. They will present a sworn note on the cost of the paper and preparation of these censuses; the voucher will be arranged by the judges, including with it an account of the work.

Lists prepared from the censuses

42. The Secretariat of the government, upon receiving the censuses, will prepare lists of houses and anmes ofindividuals not vaccinated in each ward, and pass this on to the secretary of the Central Committee.

Naming of vaccinators and commissioners

43. From these lists, without waiting to see if they are complete for the entire city, the committee will proceed to name for each ward a vaccinator and a commissioned assistant for the vaccinations. From these duties neither the Protomedico nor any of the elected members of the committee are exempt, except for the secretary.

Their qualities

44. The vaccinators of the capital will all be licensed physicians (or surgeons), or be approved by the Protomedico, who will inform them of their nomination. For commissioned assistants they will nominate Ecclesiastics, members of the Hon. City Council, and prosperous citizens. Their nomination will be communicated to the Ecclesiastics by the office of the Illustrious Lord Archbishop and for the others by that of the Lord Regent.

Their functions

45. By mutual agreement on set days and hours, the commissioner and the vaccinator of each ward will proceed to vaccinate those on the copy of the list received from the secretary of the committee. They will go from house to house, marking off daily each name and their ages.

Of those who remain without vaccination

46. Those individuals who are not found in their house or in the surrounding areas or for just cause cannot be vaccinated, will come to the house of the commissioner on the day and hour agreed by the vaccinator. If they fail to so appear, the commissioner will so advise the Lord Regent, who will take measures for their vaccination.

Time for the vaccinations in each ward

47. In order to conclude the vaccination of each ward, those who are in charge of it should display prudence and zeal. It is recommended that the task be completed as soon as possible. If it is seen that there is considerable delay, the committee will so insinuate to the respective commissioner, as the one primarily responsible, that it is entrusted to his care.

Inspections of the vaccinated

48. In the days in which the vaccinator and commissioned assistant decide to return to visit the vaccinated in their houses in order to meet with them, they should note which vaccinations were ineffectual and any other anomalies observed. In order that no one be absent upon the time of this visit, they should advise them of the day and hour of their visit. If someone is absent, or for some other reason cannot be seen, they will proceed according to Section 46.

49. Upon completing the vaccination of a ward, those in charge should provide a report to the committee. They will refer to all that took place, extracting them from the journal of the vaccinator, which should be carefully kept by him so that it can be exhibited upon request. The report will be accompanied by two lists: one of persons perfectly vaccinated, in which in his judgment there is no doubt that the vaccination is true and who display the virus pockmark; the other list is of those excused from inoculation for just cause and of those whose vaccination was ineffectual. In both lists there should be the names, houses, or localities of houses; and in the second, very clearly, the reasons and circumstances for their condition should be given. They should return to vaccinate, as soon as convenient, individuals on the second list.

District of the Capital

Charge of the committee

50. All towns in this province [i.e., Amatitanes and Sacatepecquez] are the direct responsibility of the Central Committee. For each they will name a commissioner and a vaccinator, similar to the wards of the capital. In other towns a short distance away, even though they are outside of this district, when it seems convenient they will adopt a similar method.

Lists in these towns

51. The Illustrious Lord Archbishop will advise the priests of each of the said towns; with the aid of the Indian and Hispanic judges, they will prepare lists of unvaccinated individuals (excluding those very young, ill, or for some other reason should be excused from vaccination) and send it to the appropriate commissioner.

Attendance in the capital for vaccination

52. The priests and judges may, with the approval of the commissioner (to whose house those on his lists would come to be vaccinated), allow an agreed number to come on certain designated hours and days. The vaccination made, they will return without delay to their towns. In order to ensure good treatment and prevent any disturbance, a judge, alderman, or other trustworthy person will accompany those who want to come.

Duty of the priests

53. The vaccinated of these towns will be watched by their priest, who will visit them on convenient days and note the progress of the vaccinations. He will note those that seem false (that is, those without any effect), as well as any peculiarity. After fifteen days he will provide a letter to the responsible commissioner, advising him before this time if something appears of special interest.

Reports to the Central Committee

54. With the diary of these vaccinations and the letters of the priests, they will present reports to the Central Committee, as per Section 49.

Provinces

Commissioned doctors

55. The vaccinations in the provinces distant from the capital will be done by means of physicians commissioned for this purpose, with instructions provided by

the Protomedicato and approved by the government. Their duty will be to vaccinate once everyone, without exceptions, who never had smallpox.

Account of their operations

56. The account of the operations of these commissioned physicians should be given to the protomedicato as well as a duplicate for their respective provincial committee, whether it already is formed or if it is formed after they conclude their operations. The same committee should remit both the books that they ought to make on the vaccinations that took place and lists of individuals who were not vaccinated (giving the reasons why they were not) and all the observations, presented in successive order.

Delays and obstacles

57. During their commission, if it takes a long time to establish provincial committees, those bogged down are advised to take every opportunity to speed their business, observing what is prescribed to complete this task.

Methods for expediting general vaccination

58. The committees will decide if the laws given for the capital and its district (Sections 36 to 54) or similar ones are adaptable to its territories in whole or part and follow those that they find best in order that the first general vaccination is completed as soon as possible in order to diminish the danger from smallpox and lessen the expenses of the commissioned doctors.

Reports of the committees on the performance of the doctors

59. The completion of the instructions that they gave to the said doctors are the responsibilities of the respective territorial committees when formed. Without a report, their expenses will not be paid; and not only must they provide a good performance, but also—depending upon the circumstances—execute their duty in each town or district in the shortest time possible.

ARTICLE IV. PERPETUITY OR ESTABLISHMENT

Annual list of exceptions

60. From the list of exceptions (Sections 49 and 56) one can deduce that they ought to or should vaccinate in the year immediately following the general vaccination and also in successive years.

Conditions of births

61. They should prepare statements on births each fifth year and of dead infants at about the same time. This work will be entrusted by the Illustrious Bishops to the priests of the four dioceses, they sending out instructions on the organization of this information.

Future vaccination by rotation

62. By lists and statements (Sections 60 and 61) each committee will determine the number of individuals who need to be vaccinated in their district periodically and annually. With regard to the preservation of the fluid, this is best done by transmitting it from arm to arm as long as possible. In consideration of precisely this object, after the ending of the general vaccination treated in Article III, they should not vaccinate everyone all.

Vaccination room in the hospital

63. Poor people will be sent to a decent room in the Hospital of San Pedro.[48] Its fiscal and medical management will be the same as the general hospital. Under the direction of its first doctor [i.e., an individual with a doctorate from a university], or a physician [an individual with a bachelor of medicine] who can substitute for him, they can rotate vaccinations in the manner prescribed by the Central Committee.

Management and government of the vaccinated

64. The vaccinated will remain in the hospital like established ranches, supported by their income. Breast feeding babies, or those of very few months, will be accompanied by their mother, or another relative, who will take care of them in the hospital for a precise number of days. They will have the best possible care under the regime established by the physician. They will not be

permitted to enter other rooms, nor come into contact with those who are sick. If any are found to be ill, apart from the vaccination (which, in any case, should prevent them from being vaccinated), immediately they will be placed in a separate area and obtain the appropriate treatment. Those vaccinated will be replaced with others not yet so treated.

Functions of commissioner in charge of rotating vaccinations

65. The individual of the Honorable City Council who will be a member of the committee will have the list of those vaccinated each year (Section 60) and those born in each parish (Section 61). He will note which ones should come to the hospital, and will take care that this takes place without exception. He will advise the Lord Regent of those reluctant in order that as gentle persuasion as possible be used to make them come. On the day of rotation (Section 63), he will assist the hospital and present the vaccinated. When they need to dismiss a vaccinated, placing another in its place, the controller will be told one or two days in advance.

Preference for those who volunteer to be vaccinated

66. Those who will present themselves voluntarily to be vaccinated in the hospital will be preferred, even although they come from elsewhere or are not on the list. But never will the number of rotation exceed those from the previous shift.

Rules for those who can be vaccinated in private houses

67. Wealthy citizens, their children, and domestic servants can be vaccinated when they desire or when they so indicate in their own houses where they can receive careful attention not available to the poor of the community. But there can be no vaccination in a private house without notification of the commissioned member of the committee (Section 65), who will accordingly modify the rotation of the hospital so that in the entire city there will not be more each time than the indicated number (Section 62). Half of this number is the most that can be vaccinated each time in private houses; so that if the number is four, two will be in houses and two in the hospital, where they never should lack the fluid.

Biyearly notice to the committee and its objective

68. Twice a year the commissioner will notify the committee of the vaccinations made, both in the hospital and in private houses. Based upon this information the committee will decide if the number of vaccinations in each rotation should be increased or diminished or other measures taken for the conservation of the fluid.

Of the settlements where there are hospitals

69. These rules are common to the cities and large towns that have hospitals. Their respective committees can put them into practice, with modifications depending upon local circumstances, without deviating from their intent, which is to perpetuate the fluid or conserve it fresh from arm to arm the longest time possible.

Where there are no hospitals

70. Where there are no hospitals, nor any money for the maintenance of the vaccinated, they will remain in their houses. The commissioned member and the parish priest will be responsible for frequent visits, instructing them and their parents or relatives on proper care and what to avoid in order that the inoculation will have its proper effect and make use of the fluid in its proper time.

Ceremony of vaccinations in the communities

71. The vaccinations, where there is no hospital, should be in parochial houses by specified vaccinators and in the presence of the priest and commissioner of the respective committee. There should be music on these occasions, as is customary in every ceremony in the communities. All the musicians of this locality should be advised that they will not receive any payment for their activities.

Lack of fluid, how to replenish it

72. When a large province, because of interruption in the vaccinations or for whatever cause, lacks fluid, it should immediately send for it. Two or more individuals

need to be selected who can return vaccinated as per instructions. The Central Committee should be quickly notified whenever this happens, with the reasons for the absence and the measures taken to remedy it.

Where it is not possible to conserve it for a long time

73. In time, the provinces with a limited and dispersed population will lose entirely the fluid for lack of individuals to vaccinate. When this happens, their respective committee should so inform the Central Committee, providing information on the number of births in the last five years and those who were excused from the vaccination from one year to another so that in time they can come to be vaccinated. The Central Committee will, as convenient, send the fluid, from arm to arm, to this territory either from the capital or from the closest community that has the fluid. In no province, no matter how few the number of inhabitants, will more than five years pass without continuing the vaccinations.

Loss of the fluid in the capital, if it happens

74. If by some accident, which is not desired, the fluid is completely lost in this capital, and it is found in another settlement of this kingdom, it will be immediately sent for by the Central Committee without any delay. If it is lost from the entire kingdom, which does not seem likely, the same committee will authorize a licensed physician or someone trustworthy to bring it from the closest district where it yet exists, from arm to arm, as per the orders of His Majesty.

Those in charge to prevent one or another happenings

75. It is expected, from the calculation of births this year, that it will be possible to maintain, under the given rules, the vaccine in this capital. It is also believed that similarly it will be possible to perpetuate it in some of the larger communities of the kingdom. The committees will maintain all vigilance for this most important objective so that the malignant pestilence of smallpox will remain forever banished from their districts.

ARTICLE V. PRIESTS AND JUDGES

Copies of these rules

76. All priests and Spanish judges of the kingdom will have an example of these rules in order that they may comply religiously with the duties listed therein.

And of the treatise on its history and practice

77. Another item that they will be given is the treatise of Moreau de la Sarthe, cited in the Royal Order of the 1st of September of 1803, of which either it or an approved abstract that contains the data, yet is in a readable style, will be reprinted in a sufficient number of copies.

Duties of the judges and priests

78. It is the duty of the priests and judges to explain to their parishioners and subjects, through conversations and public speeches, the marvelous efficacy of the vaccine fluid for preserving them from smallpox epidemics and of the impressive advantages of this inoculation. On the rustic Indians, the priests will use all the influence of their holy ministry. Where they and the judges are informative and zealous, there will be no difficulty that cannot be easily overcome. Where ignorance produces delay and obstruction, it is these same judges and priests who will be primarily responsible.

When the vaccination results in another illness

79. The vaccine does not cause an illness; it produces a lingering indisposition without any grave results that preserves one forever from the smallpox epidemics.[49] It is an obligation of both the judges and the priests to explain that according to experience in all the countries that if in someone, they see symptoms different from the ordinary that denote seriousness and cause them to offer up prayers, one should not attribute it to the vaccination but to some other previous or posterior cause. This will prevent fear and distrust—a result of such thoughts—to which the people are so prone. They should halt all help for those vaccinated who are discovered to be sick with some other illness, so if they die it will seem to be from their sins. In so far as possible this origin or cause should be diffused among the people. This will silence those

who, for malicious reasons or ignorance, utter contrary views.

The object of these regulations

80. Care should be taken that everyone will be vaccinated at the proper time, as quickly as possible. And that those who will be born are successively vaccinated and these also quickly except for those excused for appropriate cause. The vaccinated should be visited and provided with the small amount of help necessary. Their incisions and pimples should be recorded, observing all that seems different from those expected from the instructions in order to so inform the district committee. Everything needed to complete their mission should be so undertaken. All duties fall equally on the priests and subordinate judges.

Zeal and merit of the judges

81. The government will examine the conduct of the judges, who will give both a biyearly account of the state of vaccinations in their territories and individual reports to the respective committees. From these sources they will learn who were negligent or left out something required; and if it is not satisfactory with regard to the chiefs of the provinces, they will so inform His Majesty when they give periodic notice of what took place and all that happened, in response to the Royal Order of the 20th of May of 1804.

Zeal and merit of the priests

82. The priests will be responsible to their bishops in their capacity as presiding officer of the respective committees. In the testimony required on their merits special mention will be reserved for their help in vaccination. In the competition for other parishes, the three names submitted for the election of a candidate, it is most important that with regard to this subject they have a satisfactory record.[50]

ARTICLE VI. THE PHYSICIANS

Prohibition of vaccination

83. From the publication of these regulations, no physician can vaccinate any individual previously unvaccinated, nor should they suffer the natural smallpox, without obeying the method and rules explained in them. Much less can someone vaccinate who is not a physician, and thus this proclamation applies to all.

The only persons permitted

84. Any physician is free to repeat the vaccination on anyone listed on the list of vaccinations, or anyone who wants it in order to make some experiment. Similarly they are free to vaccinate those who have had smallpox, noting the effects of this treatment and publishing it.

When it will be free and when one can receive an honorarium

85. The general vaccination, treated in Article III, will be free for all classes of people. In subsequent ones made in private houses (Section 67), the physicians or vaccinators can receive a just honorarium. Those made in the hospital always will be free.

New observations

86. Every physician has the obligation of learning the new observations and experiences pertaining to the vaccine that were made in other countries in order to repeat them here and to make, on the same principle, other new ones.

Attempts to find the cowpox

87. When convenient, those in charge should check the cows of this country for illness-producing pimples that could be the cowpox. They should test the fluid of these pimples in order to, if at all possible, discover a local source of the vaccine in our territory.

They should vaccinate the cattle and other animals with these objectives

88. They should vaccinate these same cattle in order to see if they can establish in them the cowpox, so as to

perpetuate it on the ranches of the countryside. They should also vaccinate other animals, particularly horses and mules, with the object, among others, of seeing if it could save them from the terrible influenza ["*epizootia*"] called plague or epidemic, that destroys a great number of them each year.

The wool-bearing livestock

89. If, following the ordinary course of events in the wool-bearing livestock, the vaccine does not alone cause a reaction but, as indicated in published papers, conserves its preservative virtue against smallpox without change, they ought to vaccinate all the sheep and rams in the entire kingdom, and repeat the vaccination periodically—if only with the end of conserving the fluid in the flocks in case it is lost in the populations.[51]

Experiments on rabies

90. There has been no notice on the idea of vaccinating dogs to preserve them from rabies. In this capital, where in the dry season one sees rabid dogs, one should test this idea even if it only has the negative effect of reducing their number.

Application of the vaccine to other illnesses

91. There are many illnesses where the vaccine is now indicated as a remedy, it having a curative or prophylactic effect. The physicians apply it even to individuals who have been vaccinated, because no injury can result and perhaps it will have a favorable effect.

News of new observations

92. Any new observation that comes to his attention should be summarized by the secretary of the respective committee in his book (Section 17), signed by the same secretary and the physician who made it, if he is present. Absent physicians should send a formal communication, the original of which should be kept with the book of the secretary.

What those can do who are not physicians

93. Intelligent and enthusiastic individuals can make observations only on animals. When the results are useful, with the approval of the Central Committee, one can make them public.

ARTICLE VII. THE VACCINATORS

In the capital

94. Only in the time of the general vaccination should each one of the wards and towns of the capital district name a vaccinator (Sections 43-50). Afterwards, only the physicians of the hospital should remain as vaccinators, without whose consent there can be no vaccinations in private houses.

Teaching of vaccination in the towns

95. One of the principal duties of the physicians commissioned in the provinces is to teach the practice of vaccination in all the more important towns of the parish, preferring public-spirited Spaniards of good reputation who shall offer systematic instruction. In towns of pure Indians, this information shall be taught to the schoolmasters when they will continue in residence with them, and so perpetuate the said practice.

Specific vaccinators, their title and functions

96. By arrangement with the provincial committees, they will name one or more vaccinators for settlements with large numbers of people, and only one for each capital of a parish, on the advice of the respective physician. In the locality or district where they are assigned, no person can be vaccinated without their consent and only under the given rules.

Assistance of a vaccinator in the committees

97. In the settlements where there is a practitioner of medicine or a surgeon, he will be nominated as vaccinator and have the duties of members of the said committee. If there are two or more vaccinators but no physicians, the committee will designate the one to assist them at their meetings (Section 27).

Uniformity of practice

98. The practice of vaccination will uniformly follow the circulated instructions and not use any other procedure.

Stipend of the vaccinators

99. The first general vaccination, made by the physicians or specified vaccinators, will be free (Section 85). But in subsequent vaccinations they can receive a just honorarium. For each new birth of this race that he vaccinates in the towns of the Indians, the vaccinator will receive credit for a stipulated amount, to be paid at a convenient time.

Their observations and experiments

100. The duty of making new observations and experiments with the animals belongs to the vaccinators of the towns (even though most of them are from the cities), because most of them will need to supervise and persevere in their repetition. In none of them should the physician exceed the intent of the rules laid down in these regulations.

ARTICLE VIII. THE PORTS AND FRONTIER ESTABLISHMENTS

What is meant by these establishments

101. In Omoa, Trujillo, Golfo, Peten, and the fort of San Carlos all matters pertaining to the vaccine will be handled by the Commandant, the Royal Chaplain, and the resident physician.[52]

Their duties

102. They have orders to complete the vaccination of these establishments. In some of them this has already been done. Consequently it is only necessary to treat new births and those who previously were exempted from vaccination.

Records of exceptions and births

103. Exceptions from the first vaccination will be listed and the records kept in the office of the Commandant. The Royal Chaplain will provide a list of the births each year—or at the most every second year—to the same office.

Requests for the fluid

104. When there is a sufficient number to vaccinate, but not under fifty individuals, the closest provincial committee will be so notified in order that they can make arrangements for the remission of the fluid from arm to arm in the manner that seems safest and most convenient.

Urgency if there is risk

105. If there has been a recent outbreak of smallpox, to which the ports of the sea are much more prone than settlements inland, they can immediately ask for the fluid from the closest locality possessing it, even although there are as few as one or two who need vaccination.

Responsibility of the physicians

106. In proportion to the increased risk of smallpox, one should increase the care needed to counteract the effects of this disease. The physician is responsible for this; and it would be wise to repeat the vaccinations when there is doubt that it has taken or if there is any indication that some individual is not under its protection.

ARTICLE IX. THE SMALLPOX EPIDEMIC

Precautions and prohibitions for inoculations

107. Upon the discovery of smallpox in any locality of the kingdom, the Highest Authorities will be quickly notified, and they will immediately take those precautions outlined in the official orders of the 22nd of April and the 22nd of May of 1804. The inoculation of anyone with smallpox is strictly forbidden.[53]

Complete vaccination if the risk is close

108. If they fear that the risk is close and certain, the respective provincial committee can, after it has established the existence of the risk, accelerate the vaccinations and not leave in this district a single individual without vaccination, even the ill and babies on the breast. For it has been established that the vaccine

does not require exceptions for age nor infirmities, that it is as benign in the youngest children as in adults, and that it does not conflict with any other human humor.[54] This is not true for inoculation with smallpox, which is why these and other precautions are necessary.

Care in these cases

109. As it is so easy to confuse the wild smallpox or vaccine with the deadly variety, and it is known that many localities do not have physicians, the provincial committees should proceed in this matter with much care in order not to vaccinate uselessly or infect the towns. And always when the risk is dubious or there is time, they should consult the Central Committee, who will inform the Highest Authorities with regard to the appropriate measures—be they those described under Section 108, or whatever they feel is called for under these circumstances.

Conclusion

110. In the Royal Order of the 15th of April of 1785, His Majesty assured his gratitude and favor to all those who practice the inoculation of smallpox with prudence, caution, and consistency necessary for its effect. Much more then merely recommending the inoculation of the vaccine, he has not spared trouble nor expense from his treasury in order to establish and perpetuate it in his domains. Also should be mentioned are all who brought it—from one to another, as well as the ministers and judges, as well as the parish priests, physicians, and persons whose zeal and patriotism may be seen in these regulations that have been printed and circulated in a preliminary form, they being remitted to the Sovereign for his approval in compliance with the Royal Order of the 20th of May of 1804.

Given in the Royal Palace of New Guatemala
[Guatemala City] on the 25th of January of 1805.

Antonio Gonzalez Saravia
Alexandro Ramirez

On March 3, 1805, the Central Vaccination Committee met for the first time. Esparragosa, who would replace the critically ill Córdoba as Protomedico, directed the activities of the committee for many years. Manuscripts in the Archivo General de Centro-América document the work of the Central Committee during suspected outbreaks of smallpox. The last formal session was in July of 1817, during a major outbreak of smallpox in Chiquimula.[55]

L.H.F.

The Fevers of Amatitlan, 1814

These notes by Dr. Narciso Esparragosa describe treatments for an 1814 outbreak of fevers in Amatitlan.[56]

The Protomedico was apparently responding to a letter sent November 9 by the local priest and assorted local officials stating: "The fevers have returned in this town, and even more quickly than before there are thirty-four ill. I have confessed seven today; although up to now no more of them than one boy has died. He will be buried today. We will advise you of whatever happens."[57]

A second note, dated November 10, added: "This town of Amatitlan has very few Indians, most are ladinos. . . . Only nine Indians are sick and the rest, who are more than sixty, were of the other caste."[58]

Curiously, although these fevers resemble those described by Porras and Desplanques in 1769 or Carbajal in 1797, few treatments are repeated. Only camomile, borage, mallow, and teasel appear on both lists.

L.H.F.

Narciso Esparragosa y Gallardo, 1759–1819

Simple and Easy Instructions for Curing the Fevers that Currently Exist in Amatitlan (1814)

The fevers that exist currently in Amatitlan as per the information given to the Protomedico [by Doctor] Don Pablo Aguilar are of the nerves that normally end after eleven days, and it is not uncommon that they persist for even up to twenty-one [days]. This illness requires different remedies according to the state and circumstances of the symptoms.

In the first days of the attack one gives Eryngo water to all patients. Use the enema #1 if possible in the morning and in the afternoon, continuing it daily. Also, I prescribe morning, afternoon, and evening the drink #2, advising that in the first days of the fever massages of oil are also very useful.

If the fever was at the beginning very strong, with much heat and restless thirst—and particularly if the patient is young—one should begin to use #3 and add to each enema three or four spoons of local vinegar. This procedure ought to continue from the first to the seventh day, when the fever could terminate without [the need for] any other remedies.

But at times it lasted longer, as I have said, and needs other help. The symptoms that might follow after this first stage are a continual weakening. It is necessary to survive the fury of the illness to continuing on the road of affliction to reach a happy conclusion.

If perhaps after the fifth day, or before if the symptoms of weakness are urgent [then] one should give the patient the emetic #4 in order to empty the stomach. It will arouse perspiration and allow other remedies to work better. One should repeat it for two or three days to the extent that it eases [the suffering] of the patient.

After the days of emetics one should follow with recipe #5 or #6, giving the patient one spoon each two hours dissolved in lemonade or in cinnamon water, adding to it one or two spoons of wine if the weakness and prostration of forces was very notable. And if other symptoms of bad disposition appear, such as lethargy, delirium, convulsive movements, convulsion, hiccups, etc.

In all these stages of more or less gravity one must always [be ready to] modify the indicated tonic procedure, changing the dosage, to better moderate the symptoms.

Always prepare the remedy each two or three hours, but if they are very ill at this time it would be very valuable for the patient to drink each hour with all food civet water made from grinding 50 or 60 seeds [of the algalia plant, a member of the mallow family] and boiling them in a jar of water. Also mix in little pieces of mustard, yeast, and vinegar; and it would be most effective to add quinine or powdered copal. On the arms, on the calf of the legs, and on the thigh one can also apply it as plasters, placing them on the same place until the skin becomes blood-red.

Applying this method with prudence, one can achieve the very best treatment. There is no need to indicate other remedies in order not to cause confusion. The diet ought to be broths and atole. In convalescence one adds chocolate and soup, passing progressively to more solid foods.

1. With a large handful of mallows or of teasel one makes a cooked portion and adds a little lard and brown sugar. In the most urgent cases, one can omit the cooking and just use water, lard, and brown sugar.

2. Cook the root of the Eryngo (two fourths of a measure), cream of tartar (two spoonfuls), and sugar or honey (whatever is available). All of this portion is taken by the patient in 24 hours.

3. Cook a good handful of barley in two fourths of a measure of water, strain it, and add a good spoonful of saltpeter, two others of good vinegar, and the necessary sugar. All this portion, divided into three or four parts, will be drunk by the patient within 24 hours.

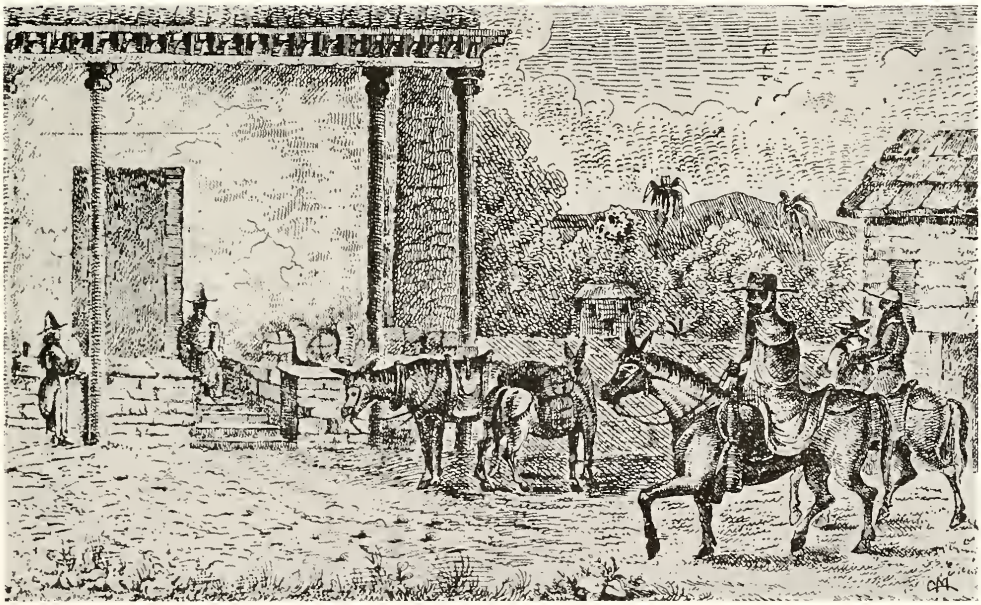
4. [Mix] two spoonfuls of emetic wine mixed with twelve of water and give to the patient three [spoonfuls] each quarter hour until the vomit is sufficiently strong or if [the patient] gives off gas; with this, one should not use enemas.

5. Quinine powder four spoonfuls, absinthe salts [wormwood] half spoonful, honey of sugar or of bees in sufficient quantity in order to be able to swallow the portion.

6. Quinine powder four spoonfuls, cinnamon and civet powder one spoonful, good rum two spoonfuls, sufficient sugar or honey to swallow the potion.

New Guatemala, November 12, 1814

Guatemalan pueblo, 1821



Narciso Esparragosa y Gallardo died in 1819. Independence was declared on September 15, 1821, and the Kingdom of Guatemala dissolved into five independent republics. How important was the heritage of the Protomedicos to the subsequent medical development of Guatemala?

Henry Dunn, a foreigner who visited Guatemala in 1827 and 1828, offered these disparaging observations:

> A fine bust of Jenner adorns one of the principal fountains, and serves to keep in remembrance the valuable discovery of which he was the author. Since the Revolution, the propriety of providing a supply of virgin matter has been brought before Congress, and, like everything else, been discussed, agreed to, and neglected. Before I left Guatimala [*sic*] I delivered to each of their medical men portions of matter, from the National Vaccine Institution of England, hermetically sealed, and accompanied them with exact directions as to the best mode of preserving a constant supply; but such is their ignorance and carelessness, that it is highly probable the greater part of it will be wasted.[59]

Thus, in the opinion of at least one observer, the colonial war against disease had ended in surrender. Too visibly the property of a past government, efforts against disease lost all momentum .[60]

L.H.F.

Plaza of the Constitution, New Guatemala City, as depicted in a French nineteenth-century engraving

Notes

1. Adrián Recinos and Delia Goetz, trans., *The Annals of the Cakchiquels* (Norman: University of Oklahoma Press), pp. 115–16.

2. W. George Lovell, *Conquest and Survival in Colonial Guatemala: A Historical Geography of the Cuchumatán Highlands, 1500–1821* (Kingston and Montreal: McGill-Queen's University Press, 1985), p. 171; Murdo J. MacLeod, *Spanish Central America: A Socioeconomic History, 1520–1720* (Berkeley: University of California Press, 1973); William L. Sherman, *Forced Native Labor in Sixteenth-Century Central America* (Lincoln: University of Nebraska Press, 1979), p. 6; Lawrence H. Feldman, "Disasters, Natural and Otherwise, and Their Effects Upon Population Centers in the Reino de Guatemala," in *Estudios del Reino Guatemala*, ed. Duncan Kinkead (Seville: Escuela de Estudios Hispano-Americanos, 1985), pp. 49–60; Noble David Cook and W. George Lovell, eds., *"Secret Judgments of God": Old World Disease in Colonial Spanish America* (Norman: University of Oklahoma Press).

3. Sandra L. Orellana, *Indian Medicine in Highland Guatemala: The Pre-Hispanic and Colonial Periods* (Albuquerque: University of New Mexico Press, 1987), pp. 155–56; Feldman, *History of the Foundation of the Town of Chamiquin by Friar Father Francisco Aguilar, O.P.* (Culver City, CA: Labyrinthos Press, 1988), pp. 5–7; [Anon.] "Tasaciónes del pueblo de Tacuilula," 1721, Archivo General de Guatemala de Centro-América, Guatemala City (hereafter cited as AGCA), A3.16-2326-34335; [Anon.] "Padrón del pueblo de Tacuilula," 1735, Archivo General de Indias, Seville (hereafter cited as AGI), Guatemala, 338; [Anon.] "Tasaciónes del pueblo de Tacuilula," 1751, AGCA A3.16-2833-41190.

4. Michael M. Smith, "The 'Real Expedición Marítima de la Vacuna' in New Spain and Guatemala," *Transactions of the American Philosophical Society* 64, Pt. 1 (1974): 5–6; Manuel Avalos y Porras and Francisco Desplanques, *Descripción Método, Que se ha de Observar en la Curación de Sarampión, y Viruelas, formado de Orden del Superior Gobierno, a instancia de Sr. Fiscal de S. M. en el año presente de 1769* (Printed by Joachin de Arevalo, 1769), copy in AGCA, A1.4.10-A1.7-5909-271-fol.9.

5. I am unable to find these terms in the standard dictionary of sixteenth-century Nahua, which uses the term *teococoliztli* or "divine epidemic" for leprosy. Alonso Molina, *Vocabulario en Lengua Castellana y Mexicana Impreso en Méjico, 1571* (Madrid: Edciónes Cultura Hispanica, 1944); [Anon.] "Libro de asiento de las partidas de tributos recaudados en el pueblo de San Juan Camotan, corregimiento de Chiquimula, desde 1724 hasta 1821," 1823, AGCA, A3.116-17528-940. Bernadino de Sahagún, *The Florentine Codex: General History of the Things of New Spain*, trans. Charles Dibble and Arthur J. O. Anderson, Book 12, The Conquest of Mexico (Salt Lake City: University of Utah Press, 1955), p. 81.

6. Province boundaries, as well as the limits of Spanish sovereignty, changed over time (e.g., the Petén did not come under Spanish rule until about 1700). But because most of the cited material comes from late in the colonial era, except as otherwise noted, this volume uses the boundaries current at the late eighteenth century to locate outbreaks of epidemics.

7. Carlos Martínez Durán, *Las Ciencas Médicas en Guatamala, Origen y Evolución*, 3rd ed. (Guatemala: Editorial Universitaria, 1964), p. 126.

8. Orellana, p. 160.

9. Ibid.; Martínez Durán, pp. 126, 154, 177, 183, 284, 327, 346.

10. Orellana, p. 159.

11. John Tate Lanning, *The Royal Protomedicato: The Regulation of the Medical Professions in the Spanish Empire*, ed. John Jay TePaske (Durham, NC: Duke University Press, 1985), pp. 119–20. The citation is for practices in Mexico City, but similar instances doubtless could be found for Guatemala, where there were even fewer professional practitioners.

12. Ibid., pp. 140, 331–32; Lanning, *The University in the Kingdom of Guatemala* (Ithaca: Cornell University Press, 1955), pp. 202–4.

13. Lanning, *Royal Protomedicato*, pp. 331–32.

14. Ibid., pp. 262, 265–66, 272.

15. Martínez Durán, p. 370.

16. Francisco Antonio de Fuentes y Guzmán, *Recordación Florida: Discurso Historial y Demostración Natural, Material, Militar y Política del Reyno de Guatemala*, 2nd ed. (Guatemala: Sociedad de Geografía e Historia, 1932–1933). Italicized words and passages appear in the original. It is interesting to observe how quickly the devotion to the

Spanish friar Pascual Bailón (1540–1592) arrived in Guatemala. Beatified in 1618, Pascual was not canonized until 1690, forty years after the cult of El Rey San Pascual had begun. See Pascual Bailón entry in Charles G. Herbermann et al., eds., *The Catholic Encyclopedia* (New York: Robert Appleton Company, 1907-1912).

17. The Pipil were speakers of the Nahua language who lived in the province of Escuintla. The Cakchiquel Maya still live in what was then known as the Corregimiento, or the province of the Valley of Guatemala. In the eighteenth century this unit was divided into the two separate provinces of Chimaltenango and Amatitanes e Sacatepeques. *Cocoliztli* means "epidemic" in Nahua. Molina.

18. This information was collected, at the request of the author, by Italo Morales, Ph.D., in Olintepeque on April 30, 1989. Many references to other strange practices—often associated with witchcraft, but that with few changes could have become healing activities—can be found in the Spanish records. Anonymous documents provide two examples from 1631 Nicaragua and 1750 Totonicapan: "Información contra Ana Dávalos, por usar polvos y hierbas para supersticiónes," Nicaragua, 1631, Archivo General de La Nación, Mexico City, Mexico Inquisición, 372:15:12 fojas; and "Contra Andrés As, Diego Vásquez Soch, Francisco As y Nicolás, por haber desenterrado restos humanos, con fines de ejercer actos de brujería," Totonicapan, 1750, AGCA, A1.15-26762-2896.

19. For complete citation of this document, see footnote 4. In the translation, the author has transcribed emphasized text in italics.

20. Lanning, *Royal Protomedicato,* p. 238; Feldman, *History of the Foundation of the Town of Chamiquin,* p. 85; Orellana, pp. 261–62; Fray Francisco Ximenez, *Historia Natural del Reino de Guatemala* (Guatemala: Editorial José Pineda Ibarra, 1967). The colonial vocabularies of Indian languages provide many references to substances with medicinal properties; for authors and titles, see Feldman, "Colonial Languages of the Gobierno of Guatemala: A Review of the Primary Sources," *Journal of Mayan Linguistics* 5, No. 2 (1986): 1–15. See also the illustrations from Fuentes y Guzmán. An example of a less successful remedy of the time is offered by the *Gazeta de Mexico,* which once, according to Lanning: "played up a 'True water for whitening and strengthening the teeth' that not only would leave them in their 'natural state' but also would cure scurvy. Two numbers later, however, the periodical reported candidly that the '*licor*' was nothing more than sulfuric acid diluted with water. It might, the slightly repentant editor reflected, clean the teeth, but it would also dissolve them 'in short order'" (Lanning, *Royal Protomedicato,* p. 363).

21. These abstracts were ultimately deposited in AGI, Guatemala, Box (*Legajo*) 630.

22. Pedro Aparicis, "El Director Contador General del departamento septentrional en 21 de Noviembre e 1798 informa con vista de la carta del Presidente de Guatemala de 5 de Abril de presente año no 201, y del testimonio que la acompaño del expendiente acuado sobre rebaxa del número de tributarios del pueblo de la Concepción de Jacaltenango por el estrago que cauio en el una epidemia de Tabardillos," Nov. 21, 1798, ibid., 832; Francisco Xavier Aguirre, "Testimonio del expediente sobre releva de tributos que solicita el Alcalde Mayor de Totonicapan a favor del pueblo de Concepción por los muchos Yndios que han muerto de la epidemia de Tabardillos, 1798," March 8, 1797, ibid., 832; enclosures from "Sobre peste de Tabardillos en el Pueblo de Jumaytepeque, y socorro con dinero de comunidad," 1797, AGCA, A1-177-7782.

23. Lovell, p. 87.

24. Ibid., p. 163; Aguirre.

25. Although the identity of this person cannot be verified, it is likely that his name is associated with a particular opiate preparation; see Córdoba's Nov. 27, 1797, reference to *masdeval.*

26. Donald R. Hopkins, *Princes and Peasants: Smallpox in History* (Chicago: University of Chicago Press, 1983), p. 80.

27. Lovell, pp. 154–60; [Anon.] "Testimonio sobre la epidemia de las Viruelas del año de 1780," 1788, AGI, Guatemala, 574; [Anon.] "Partido de Verapaz, Estado que de Muestra el número de Pueblos," 1778, AGCA, A3.29-1749-28130-folio 148; Domingo Juarros, *Compendio de la Historia de Reino de Guatemala* (Guatemala: Editorial Pedra Santa, 1981).

28. [Anon.] "Libro de asiento de las partidas de tributos recaudados en el pueblo de Asunción mita, corregimiento de Chiquimula, desde 1765 hasta 18006," 1798, AGCA, A3.5-352-7320; [Anon.] "Libro de asiento de las partidas de tributos recaudados en el pueblo de San Pedro Zacapa, corregimiento de Chiquimula desde 1781 hasta 1821," 1821, AGCA, A3.16-26545-1615; [Anon.] "Libro de asiento de las partidas de tributos recaudados en el pueblo de San Juan Camotan, corregimiento de Chiquimula, desde 1724 hasta 1821," 1823, AGCA, A3.116-17528-940.

29. Domingo Gonzalez de Leon, "Carta del Padre Cura de Soloma a Presidente de Audiencia," San Pedro Soloma, Oct.

12, 1795, AGI, Guatemala, 648; José Domas y Valle, "Carta de Capitan General de Guatemala a Eudenio Llaguira Amirola," ibid., 478; Domas y Valle, "Carta Capitan General de Guatemala," March 2, 1796, ibid., 478; José Felipe Flores, "Testimonio de Protomedico sobre la Certificación Relativa en que constan los Meritos y Servicios hechos a S.M. por Don Francisco Sebastioan Chamorro, Alcalde Mayor que fue de la Provincia de Totonicapan," Feb. 17, 1796, ibid., 478. The epidemic was erroneously thought by Hopkins to have been transported by ship from Peru in April, 1796, to Chiapas or Acapulco (p. 222). Contemporary Guatemalan accounts show that this is wrong. Also, Chamorro's belief that the epidemic originated among the "wild" Lacandon Indians north of Totonicapan and then was transmitted by them to the town of San Mateo appears very unlikely given the few contacts of the Lacandon with the outside world and the known contacts between San Mateo and Chiapas. See Chammorro, "Carta del Alcalde Mayor de Totonicapan a Presidente de Audiencia," Totonicapan, Nov. 28, 1795, AGI, Guatemala, 478.

30. Lanning, *Royal Protomedicato*, pp. 318–20; Martínez Durán, p. 680. A discussion of Flores's cancer cure, meatballs made from the newts of Lake Amatitlán (a body of water just south of Guatemala City), can be found in Lanning, *Royal Protomedicato*, pp. 338–40.

31. Lanning, *Royal Protomedicato*, pp. 37, 369.

32. Hopkins, p. 7.

33. Lanning, *Royal Protomedicato*, pp. 372–73.

34. Gonzalez de Leon, "Carta del Pardre de Soloma a Presidente de Audiencia," Soloma, Oct. 12, 1795, AGI, Guatemala, 648; Chamorro, "Método en que practico la Inoculación de viruelas en la Pueblo de las ferosas Indios Mames y Pocomames situados cerca de la Montanas de los Indios Bravos Lacandones en esta Governación de Guatemala," New Guatemala, Feb. 3, 1798, ibid., 648; Chamorro, "Carta del Alcalde Mayor de Totonicapan a Presidente de Audiencia," Aug. 29, 1795, ibid., 648; Chamorro, "Estado de los Parbulos que sufieron contagio de Viruelas en cinco Pueblos, tres del Curato de Soloma, y dos de Jacaltenango en la Provincia de Totonicapan, en su parte mas Septentrional, y frontera a la Provincia de Chiapa de donde ha venido peste este año de 1795," ibid., 648; Chamorro, "Carta del Alcalde Mayor Totonicapan a Presidente de Audiencia," Totonicapan, Oct. 26, 1795, ibid., 648; Chamorro, "Carta del Alcalde Mayor de Totonicapan a Presidente de Audiencia," Totonicapan, Nov. 28, 1795, ibid., 478.

35. Jenner, *An Inquiry into the Causes of the Variolae Vaccinae* (London: Law Murray & Highly, 1798); Hopkins, p. 7.

36. Flores had earlier used inoculation in the epidemic of 1780, but only in Guatemala City. Carlos IV did much for medical sciences during the first ten years of his reign, including the establishment of the Real Colegio de Medicina and a school of veterinary medicine in Madrid. Smith, p. 13; Lanning, *Royal Protomedicato*, pp. 338, 372.

37. Smith, pp. 13–15.

38. Ibid., pp. 11, 50–52.

39. Ibid., pp. 50–52.

40. Ibid.

41. Ibid.

42. Ibid.

43. Ibid.

44. Ibid., p. 54.

45. Ibid.

46. [Córdoba] *Reglamento para la Propagación y Establidad de la Vacuna en el Reyno de Guatemala* (New Guatemala: D. Ignacio Beteta, 1805), copy in AGI, Indiferente General, 1558A. This translation, based on a draft by Córdoba, does not include the preamble or Table of Contents.

47. This work, translated into Spanish by Dr. Francisco Xavier de Balmis and titled *Tratado histórico y práactico de la Vacuna*, was regarded by Smith as "the most complete study of vaccination at that time" (p. 17). All italics in section 17 are also so indicated in the text.

48. The "Hospital of San Pedro" is not otherwise known in the available literature. There was a Hospital de San Pedro, but in 1795 its resources were taken over by the Hospital San Juan. Martínez Durán, pp. 352–54.

49. The immunity induced by vaccination was not lifelong, and it was necessary for persons to be revaccinated after a few years in order to maintain complete immunity. Hopkins, p. 7.

50. The post of parish priest, and the salary that went with it, was selected on the basis of submitted curriculum vitae of three candidates. For examples of such eighteenth- and nineteenth-century records, see the "Curatos" section, Archivo Episcopal General, Guatemala City.

51. Córdoba even inoculated sheep with smallpox virus in an effort to induce cowpox or a similar disease; see Smith, p. 50.

52. The fort of San Carlos was in what is now the republic of Nicaragua. Trujillo is on the north coast of Honduras.

53. Inoculation of infected persons had been common in Guatemala in the decade prior to vaccination. Lovell, p. 160.

54. The four basic humors, an imbalance among which were thought to be the cause of disease, included blood, yellow bile, black bile, and mucous. Hopkins, p. 9.

55. Lovell, p. 162; José Antonio Peña, "Informe rendido por las autoridades de Zacapa, acerca de las medidas para evitar la propagación de la peste que ha invadido el pueblo de Santa Maria Magdalena," April, 1801, AGCA, A1-4934-180; Esparragosa, "Provincia para contener la peste de fiebres que azota los pueblos de San Augustin Acasaguastlan y Magdelena, del partido de Zacapa. Tiene una lista de los enfermos y sus sintomas y de de los fallecidos," 1808, AGCA, Al.4.9-3636-177.

56. Esparragosa, "Ynstrucción Sencilla y facil de practicar para la curación de las Calenturas que se padecen actualmente en Amatitlán," Nov. 12, 1814, excerpted from *Amatitlan 1814, Providencia del Superior Gobierno sobre la epidemia de Tabardillo de este Pueblo,* AGCA, A1.21-11903-1809.

57. "Interim Priest, Mariano Mauda, together with the Governor of the province of Amatitanes and Sacatepequez, D. Jose Abaria Martínez de Cevallos," Nov. 9, 1814, San Juan Amatitlan, AGCA, A1.21-11903-1809.

58. AGCA, A1.21-11903-1809.

59. Dunn, *Guatimala* (New York: G. and C. Carvill, 1828), p. 153.

60. For the names of prominent Guatemalan doctors and their attempts to renovate the colonial administrative structure in the decades after independence, see Martínez Durán, pp. 564–687.

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Dedication and Acknowledgments

This monograph is dedicated to Gabrielle, Shana, Davey, Jacqueline, and Rhonda and her husband, Dave the M.D. The author also expresses thanks to those at Southern Illinois University School of Medicine who waited so long for a manuscript delayed, and enriched, by his need to travel in the Americas and Europe.

Credits

Frontispiece, page 54: *Amérique Centrale: Colonisation du District de Santo-Thomas de Guatemala* (Paris: Rignoux, Imprimeur de la Societe Orientele, 1844), plates 4, 3.

Pages 1, 11, 21, 34, 36: Francisco Fernandez del Castillo, *Los Viajes de Don Francisco de Xavier de Balmis* (Mexico: Galas de Mexico, S.A., 1960), pp. 35, 31, 101, 65.

Page 3: Thomas P. Broad, Division of Biomedical Communications.

Pages 4, 31: Francis Polo Sifontes, *Los Cakchiqueles en la Conquista de Guatemala* (Guatemala: Editorial José de Pineda Ibarra, 1980), opp. pp. 32, 20.

Pages 12, 14, 15: Italo Morales and Lawrence H. Feldman.

Pages 16, 22, 27: Museo de la Farmacia, Guatemala City, and Lawrence H. Feldman.

Pages 28, 49, 51: Ramón A. Salazar, *Historia de Veintiun Años* (Guatemala, C. A.: Secretaria de Educación, 1928), pp. 33, 193, 47.

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